AMERICAN BEEKEEPING FEDERATION

QUARTERLY

VOL. 79, NO. 2, 2021

THE AMERICAN BEEKEEPING FEDERATION

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WHERE DO YOU FIT IN?

JOAN GUNTER, ABF PRESIDENT

We are fortunate that the American Beekeeping Federation (ABF) is set up the way it is. A lot of thought has gone into this structure. Different levels are established for various reasons. In the end, representing all beekeepers and coming together with unlimited knowledge is the advantage of the ABF.

Commercial, Serious Sideliners and Small Scale (a.k.a. Hobbyist) beekeepers all have their place within the beekeeping industry. The structure within their business models can differ drastically, but we find that a colony's health and productivity is important to all beekeepers. So, who is who and what are the rules?

Bees returning on trucks from pollinating in CA.

Commercial Beekeepers manage thousands of hives. Some are dependent on pollination services and contracts for pollination services. The California almond orchards demand a large portion of the pollination contracts during bloom, bringing a large portion of a beekeeper's income.

Some commercial beekeepers depend on strong colonies to produce a seasonal honey crop. The domestic honey market has skyrocketed. Our consumers have chosen honey as a natural sweetener over other sweeteners offered on the market and have decided they want an American-made product.

To take this one step further, some commercial beekeepers manage both pollination and a honey crop which creates a stressful environment for the bees. Constant moving and continued exposure to chemicals, diseases and pathogens, along with the constant battle with the varroa mite, put the colonies in a weakened state from which they can't easily rebound. But thank you to our Commercial Beekeepers for taking a risk by transporting their bees so that our fruits and vegetables get pollinated so they can grow.

Serious Sideliners generally have colony numbers ranging from 50 colonies up to 500 colonies. These beekeepers may be actively involved on a smaller scale of pollination and honey production. They face the same obstacles as the Commercial guys do, just on a smaller scale. This group usually sells their honey locally at a premium price. They are excellent advertisers for the honey industry as a whole because they sell a quality product.

Small Scale Beekeepers/Hobbyists are the smallest of the three groups. These beekeepers can have from one to several hives. They typically engage in beekeeping as a hobby or for recreation. They beekeepers enjoy the honey they produce and sometimes share their product with others. Small Scale beekeepers often bottle their own honey and sell their product at local markets on their own time. They are great representatives of the beekeeping industry because of their pride in what they are producing. These beekeepers face the same obstacles as the Commercial and Serious Sideliners when it comes to bee health. The hives' stressors may be less, because they are not being moved as much, but they still exist.

Beekeepers cleaning up pallets in the Queen Yard.

Now, remember my first question? Where Do You Fit In?

After taking a good long look at our membership and all that ABF does for you and your business, are you in the correct category on the ABF membership type? Visit www.abfnet.org/page/membership for a closer look.

If not, let's fix it, so, as ABF members, we can share and gather the tools and knowledge we each need to continually enhance and grow our industry.

Joan Gunter

Joan Gunter
ABF President
American Beekeeping Federation

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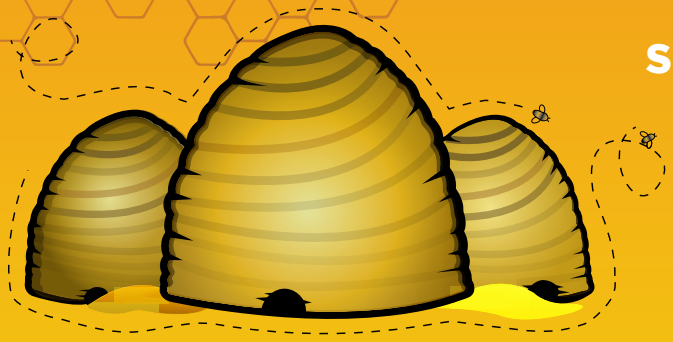

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Proverbs 16:24

HELPING BEEKEEPERS NATIONWIDE

DAN WINTER,
ABF VICE PRESIDENT

Now that spring has begun, most beekeepers are well into their busy season. Many beekeepers have completed spring pollination contracts and have started moving hives and planning for honey. Fruits are in full bloom here in New York. I'm ready to put supers on and relax while my hives produce honey.

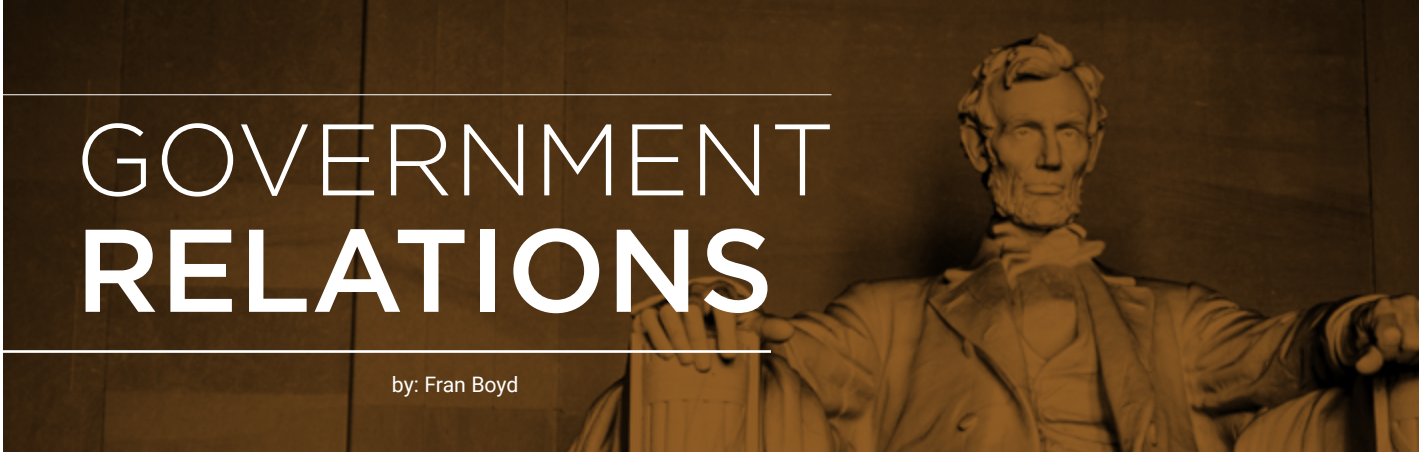
Everyone on the ABF Board of Directors is looking forward to the January 5-8, 2022 ABF Conference and Tradeshow in Las Vegas. We are excited to be able to to being able to meet in person again. The conference committee has worked hard and has a great lineup of speakers, including sessions on research. I'm looking forward to hearing about two years of research.

Many Universities continued their research projects and have plenty of information to relay to us. Most commercial operations agree it is the science that brings us together every January at the ABF Conference. Of course, meeting with our peers is also fun and entertaining. Please stop by ***www.abfnet.org/page/conference*** to get the latest conference information as it becomes available.

I want to thank Meeting Expectations for working hard to find a new Executive Director for ABF. Nola Salisbury is very well qualified and a true leader. Welcome to the American Beekeeping Federation, Nola. I look forward to working with you!

Thank you to the ABF members for sticking with us through the pandemic. We are ready to lead the industry into the future.

Dan Winter
ABF Vice President



GOVERNMENT RELATIONS

by: Fran Boyd

"A Bee's View from DC"

The House and Senate have left town for a short recess before they begin the next legislative stretch which will take us to Memorial Day. This pause provides an opportunity for me to give you a brief report on several issues important to our industry. After Congress returned following the Easter and Passover recess, they began to address the next phase of the President's agenda following the $1.7 trillion COVID relief package. It is a massive piece of legislation providing relief to many different sectors. However, there is language in the bill providing funds to the Secretary of Agriculture for producers and language in the bill making sure that money allocated to the states gets to rural counties. In addition, there is significant funding for expanding broadband access to underserved areas.

Congress is now considering how to deal with the President's new multi-trillion-dollar infrastructure bill, "The American Jobs Plan." This massive legislative endeavor will take an enormous effort from the Administration and Congress. It may even be broken up in to several different pieces of legislation. One thing that seems to be agreed upon by all members of Congress is that the country needs an infrastructure bill. The question becomes for how much and what is infrastructure?

In the meantime, the issues below are ones the industry is involved in or following.

Ag Labor Immigration Reform

The House passed the Farm Workforce Modernization Act (FWMA), which took a major step toward reforming the farm labor policy. It has been over 35 years since significant immigration reform legislation has been enacted. The FWMA which is supported by ABF, passed the House by a vote of 247-174 with 30 Republican members voting multi-g for passage. The legislation is not perfect, and we will continue working together with our coalition members to improve the legislation as it moves to the Senate for consideration. The bill provides a process for existing undocumented farmworkers to obtain legal status. It also provides for the establishment of a year-round H2A program providing labor access to many who could not qualify for seasonal employment. While there are many areas of the legislation that we will be working to improve, the FWMA has the support of the vast agricultural community members and the National Farm Workers Union. If we can keep this coalition together, we may have a possibility of sending to the President the first real agricultural immigration reform legislation in a generation. This won't be easy, but we will continue to press the need for a viable source of ag labor together with others in agriculture.

Appropriations

We have been working closely to coordinate with others in the beekeeping industry to seek federal appropriations for the bee/honey industry as we have in years past. The House Appropriations subcommittees are beginning to consider federal funding for this fiscal year. We have been in contact with staff members of the subcommittee and individual member's offices. The Senate is a little behind the House in this process, but we have been in contact with Senate Agriculture Appropriations subcommittee chairman Merkley (D-OR) as well as subcommittee member Senator Baldwin's (D-WI) staff and the subcommittee Ranking Member Senator Hoven (R-ND) and others on the needs of our industry.

Our core request is for a $5 million across-the-board increase in Agricultural Research Service (ARS) research funding for bees. This would increase ARS bee lab funding, particularly the Beltsville bee lab. In addition, we would like to see $1.5 million provided by National Academy of Sciences (NAS) to do the pollination services survey. The last one done by NAS was in 2017.

Transportation

ABF has participated in many ag-transportation coalitions calls on several issues important to our beekeepers. We helped draft and signed onto a coalition letter to the Biden Administration of what we would like to see in infrastructure legislation. It is imperative that agriculture continue to have a strong voice in this area since we depend so much on the condition of our nation's transportation systems.

Also, ABF has continued to work very closely with our fellow "livestock" producers on the Hours of Service (HOS) exemption for livestock and were able to get the DOT to extend the Emergency Exemption for livestock haulers (including bees) until the end of May.

Chinese Tallow

We have been successful in USDA again extending the comment period on the AHIS-proposed rule on Chinese Tallow. Several of our state organizations, as well as individual beekeepers, have submitted comments to the USDA. ABF and AHPA will be jointly submitting detailed comments to the department of this proposed action and its effects on U.S. beekeepers. In addition, we have discussed with Congress the importance of the Chinese tallow proposed rule.

The other issue that is so very important to our industry is the nominations by President Biden to the positions in the Executive branch at the USDA, EPA, Interior and FDA will set the policies that will have a significant effect on U.S. beekeepers.

As I write this, Congress is still working remotely, hearings are held by Zoom, and many congressional staffers are still working from home. We can all hope and pray that the situation will continue to improve.

I hope you have a great summer!

ASK HOOPIE

Please email your questions to ***info@abfnet.org*** with *"Ask Hoopie"* in the subject line.

Q. ***I would like to pick up some additional swarms. Any hints?***

A. Call your local fire and police departments and tell them that you're interested in picking up swarms. Many people call these resources first when they see a swarm. Also, be ready with all your catching gear, because a swarm only stays on the tree limb for a few hours, and you don't know how long it has been there when you receive the call.

When I get notified of a swarm, I always ask, "How high up is the swarm?" If they are beyond the reach of my stepladder and I can't get to them, I tell the people that the swarm will leave in a few hours. Years ago, I had a beekeeping friend that shot the high swarms off the limb with a shotgun, but that is risky and, in many places, against the law.

You can also set out swarm traps. Research done many years ago showed that the optimum size cavity that swarms are looking for is about the size of a standard 10-frame Langstroth hive box. The optimum height is between 12-15 feet. The traps work best if they have a chemical lure inside, but some old empty comb works very well also. If you can't place the trap 12-15 feet high, a trap on the ground often works. Many beekeepers keep an empty hive in their apiary, with some old comb, that sometimes catch a swarm, especially those that emerge from their own colonies.

Q. ***When I look at a frame of brood, what should I be looking for?***

A. Look for uniformity. A queen can lay 2,000 or more eggs a day in late spring and early summer. And to do this, she can't lay an egg here and wander around and lay an egg there. She will lay the eggs in significant brood batches if there are empty, clean cells for her to lay them in. A Langstroth deep frame has more than 4,000 cells per side which means that a queen could spend two days laying eggs on just one side of the frame. (She rarely does that, but you get the idea.)

Unless the brood nest is crowded, the queen lays her eggs in significant batches. Most experienced beekeepers look at the capped or sealed brood as this is easier to examine. If there are lots of gaps in the pattern, then it is time to be concerned. There will be some small gaps in normal, good brood patterns. What your eye is looking for are significant breaks in the pattern. A significant gap could mean possible larval disease, and you would see the decayed remains in the cell, and antibiotic treatment would be necessary. Gaps could also mean the queen is failing (check the queen mark for the age of queen). Sometimes nectar is coming in so fast that foragers will put the nectar in any available cell if there is no space in the supers. That is a warning sign for you to add more supers. I also look for eggs. If there are no eggs, it could indicate the colony is getting ready to swarm. It also could mean that the queen is missing or failing.

Let's look at a normal brood viability pattern. In some outstanding research done in Japan many years ago, the viability statistics they found showed that in 1,000 eggs laid, about 8 percent do not hatch because of lethal genes or sex allele problems. There are similar losses in the larval stages and a very small loss in the pupal stage. Of the 1,000 eggs laid, approximately 850 make it to emerge as adult bees. So, it is normal to see one or two capped cells missing in a large pattern of capped cells. Often gaps in the sealed brood pattern exist because the queen is failing.

I also look at the corners of the frame to see if honey is there. There usually is, but, if not, check other frames and supers to see if honey is in the hive. When the total honey in the hive drops below 15 pounds (3 deep frames), the colony will stop raising brood. Three frames are a critical threshold; the colony senses that if the whole colony is to survive, they can't use it all up on the brood. This can happen to a colony just before the main honey flow starts, and just one or two days of not raising brood can be a critical population loss a couple of weeks later and a subsequent loss of honey.

Q. ***I want to make some splits (nucs) to overwinter and reduce the varroa mites load, much like you described in a previous Ask Hoopie column. What are your suggestions or hints for making nucs for overwintering?***

A. The timing and path you take to make nucleus colonies for overwintering depends on how much work you want to do and how much work you want the bees to do.

If you make the split early in the season, the bees can build up their population and store honey for the winter. But it may well be at the colony's expense that you took the bees to start the nuc. However, you can take a frame of emerging brood and bees from several colonies, and the damage to any one colony is very slight. This also means you have several colonies, and this limits the damage to a single colony. If you wait until the honey flow is over to make the split, the bees usually can build up to a strong enough colony to survive the winter, especially if you group four of them and wrap them to overwinter. In most cases, you will have to feed sugar syrup to these nucs or provide them with frames of honey to get through the winter. I have managed to get a four-frame (6 5/8 inch) nuc through the winter by feeding it slightly dampened sugar on top of the frames.

Nucs started by letting the nuc produce a queen, or from a queen cell inserted at the start, has a significant break in the brood cycle, which prevents the varroa mites from reproducing. This reduction of mites allows even a small cluster of bees to survive the winter. Most likely because of the reduction in viruses that are transmitted by the mites.

The Special Secret to Successfully Overwintering Honey Bees

FOUNDATION FOR THE PRESERVATION OF HONEY BEES, INC.

4-H ESSAY THIRD PLACE WINNER

by: Venya Gunjal, Georgia

It was late December. The weather had become much cooler, and the crisp autumn air had turned into the bitter cold that winter brings. I remember most kids were rejoicing because school would be out soon for the holiday break. But that wasn't my case. I was excited for a different reason: It was time to help my local honey farmer, Mr. Brian Higgins, begin preparations to overwinter the honey bees for his honey company, Hometown Honey! I know, I know. You're probably wondering, "What in the world does it mean to overwinter honey bees?" Overwintering is a method used by bee farmers to help their honey bees survive during the winter in order to produce honey in the following year.1 It's a really fascinating process!

Preparations started a long way back, however, and believe it or not, the bees themselves were the ones who began the process! Over the summer, we all know the bees were abuzz collecting pollen for honey making. However, another key substance was collected by the bees in order to survive the winter—propolis. Propolis is used by bees to close holes in their beehives, which is why it is often called "bee glue." It's usually obtained from leaves, bark, flower buds and other parts of plants.2 These are then mixed with bee saliva, wax and pollen, which are adhered to the hive holes afterwards.3 Bees collected this propolis during the summer months and began repairing their hives so that the frosty winter air wouldn't cause the bees to perish. Collecting propolis is a special skill that the bees possess, for it would be very difficult for people like Mr. Higgins to repair each and every little hole in a beehive each year. This adaptation is just one of the many skills bees possess in order to prepare for overwintering.

The next step was one that that Mr. Higgins did by himself in the fall, and it was important for the bees' safety. He tests the bees for mites to make sure that there wasn't an infestation when he left the bees to overwinter. Along with this, he made sure that their hives were in good shape and didn't have any unwanted critters hiding in them.

Right after school ended, I had hurried over to the honey bee farm. Mr. Higgins greeted me, and we got started right away! The first step we did was clean all the hives because excess pollen, parasites, propolis and waste materials got stuck on the inside of some of the hives. Since Georgian winters aren't as harsh, Mr. Higgins didn't apply any materials to the outside of the hives. Instead, all the magic happened on the inside. The tools he used were entrance reducers, a super of honey supply (60 pounds) and plastic covers for the bottom boards that are screened.

The beehive's entrance reducer was made of thin pieces of wood—other types can also be made of plastic or metal. The reducer had two to three cuts (we had varying types) that the bees could use to enter and leave the hive. The main aim of the reducer was to limit or minimize the beehive's entrance to a more regulated area. Entrance reducers made the entrance smaller to hold in the warm air and to keep out unwanted critters (snakes or mice and other bees trying to steal honey, also known as robber bees).4

The super of honey was used as a supply of food for the bees, so they wouldn't starve over the winter.5 For the larger hives, up to two supers of honey were used. Mr. Higgins was sure to check if the queen was able to access the honey super. This was especially important because the whole hive is dependent on the queen bee.6 Bee starvation is one of the biggest causes of bees perishing during the overwintering process, so providing the adequate amount of honey to them is crucial, as Mr. Higgins was sure to let me know.

There were many bottom boards that were screened at Mr. Higgins's farm.7 This proved to be quite useful in the summer months, as it provided ventilation throughout the hive and gave the bees some more exposure to the outside world.8 However, this was very harmful for the bees in the winter because it could allow harmful drafts to come inside the hives, which could have led to many of the bees perishing. Many types of parasites could also enter the hive easily and infect the bee population.9 So, Mr. Higgins and I decided to secure plastic screen covers onto the boards, which are sheets of heavy plastic that can be placed on top of a screened bottom board to prevent these problems.

Finally! We finished preparing the hives for this winter - it was challenging work but was worth it. I look back on that fun day and remember all the work we did, along with the jar of honey from Mr. Higgins that I had enjoyed very much. This summer, many of the bees are thriving because of our work. But how could I forget? Overwintering

is teamwork—for the bees know how to do many things on their own in order to prepare themselves. I guess you could say that farmers and bees sure do make a great team!

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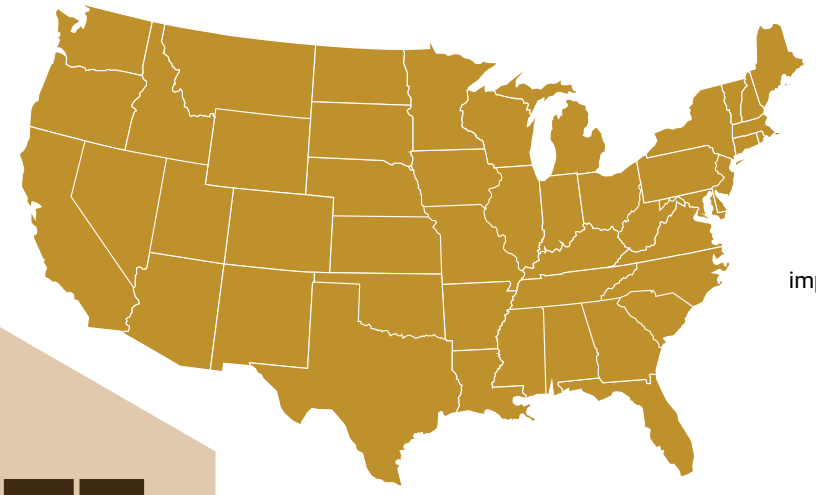
BEE CONNECTED

If you are a member of Facebook, you can be a fan of the ABF Facebook page. All you have to do is simply search Facebook for "American Beekeeping Federation" to access the page and click the "Like" button to become a fan.

Everyone is welcome. To date, we have more than 38,000 fans and are reaching new fans each day.

If you have a Facebook fan page for your business or local beekeeping association, let us know and we'll add you to our line-up.

Please feel free to post your beekeeping photos on our page, write on our wall and keep sending your friends to our page. Stay tuned for ABF updates, fun facts, recipes and photos of our ABF members doing what they do best!



STATE DELEGATES

Each state having ABF members may appoint a State Delegate to serve as a liaison between ABF and its state association and local clubs. Each State Delegate acts as a Membership and Legislative Coordinator—communicating important membership and legislative information between ABF and the state and local clubs.

Let's grow together! Don't miss this opportunity to publicize your state meetings.

Let us know if you want your state more involved with the membership and legislative happenings and consider becoming a State Sponsor of the ABF.

DON'T SEE YOUR STATE MEETING LISTED?

Contact your state beekeeping organization. State Delegates may submit state-level meetings by emailing us at *info@abfnet.org*.

The American Beekeeping Federation State Delegates Assembly met via zoom in March. We had an excellent speaker, County Commissioner John Schellenberger, that shared his experience and the steps he went through to get a law passed on "Preventing a Ban on Beekeeping". We also heard about the Hives for Hero's program.

All 50 states are allowed at least one delegate to attend the meetings, provide input and vote at our annual assembly meeting to elect our board representatives. Many states are allowed two or three delegates. The number of delegates per state is determined by the number of members that state has or how much has been paid by dues. Delegates must be a member of ABF and can be elected by their state membership or appointed by their state board of directors. This decision is up to the state.

Number of Members	Delegates Allowed
1-14 Members	1 Delegate
15-74 Members	2 Delegates
75+ Members	3 Delegates
Amount Paid in Dues	**Delegates Allowed**
$60-1499	1 Delegate
$1500-10499	2 Delegates
$10500+	3 Delegates

The following six states and D.C. do not have representation in the delegates assembly at this time: Alaska, D.C., Rhode Island, South Dakota Vermont, Virginia and Wyoming.

We also have several states that are underrepresented. We are referring to states that are allowed more delegates than they currently have in the assembly: Florida, Georgia, Hawaii, Idaho, Illinois, Iowa, Kansas, Maryland, Massachusetts, New York, North Dakota, Texas, Washington.

Meetings are the second Tuesday bi-monthly at 8:00 pm EST. The rest of the meeting schedule for 2021 is below. Please add these to your calendar so you can attend.

- July 13, 2021
- September 14, 2021
- November 9, 2021

If you are from one of the states above in either category, send an email Debbie Seib at *seibshoosierhoney@yahoo.com* or call 317-432-9578.

STATE MEETINGS

INDIANA

Purdue Field Day
June 26, 2021
Beck Agricultural Center in West Lafayette

Cost: $30 per person that includes coffee/juice/donuts in the morning and a box lunch.

Indiana State Fair
August 6 - August 22, 2021
Booth in Ag Hort building

Honey ice-cream, honey lemonade and of course all other items from the hive. In addition, we have an observation hive that is very popular and each day at 11:00 am we put on a children's program and at 5:00 pm we do a stage presentation about our industry.

Second Location: Pioneer Village

Started in 1961, this village is a building that is filled with the 1800's artistry from loom weaving to broom making. We make beeswax candles here and show all who stop how we do this.

Fall Conference and Workshops
October 29-30, 2021
Blue Gate Inn
Shipshewana, Indiana

Cost:$40 and includes a Amish Buffet Lunch on Saturday. Our negotiated rate at the Hotel Room Info: Blue Gate Inn is $110.98 + 12% room tax and includes breakfast. We have a Honey Show, build equipment and make candy board, and lots of other activities planned

Guest speaker: Dr. Geoff Williams from Auburn University

FOR MORE INFO OR DETAILS:
https://www.indianabeekeeper.com/

OKLAHOMA

Oklahoma State Beekeepers Association Fall Conference
October 23, 2021
Will Rogers Garden Center
3400 NW 36th St.
Oklahoma City, OK

FOR MORE INFO OR DETAILS:
https://soonerbees.org/

Project Proposal: Towards a Better Understanding of Honey Bee Queen Immunity

FOUNDATION FOR THE PRESERVATION OF HONEY BEES, INC.

SCHOLARSHIP WINNER PAPER

by: Abigail Chapman
The University of British Columbia

A honey bee queen is the keystone to her colony, playing the singular role of producing enough offspring to sustain a healthy hive. However, poor or failing queens are increasingly reported by beekeepers as a contributing factor of colony weakness or failure. This has obvious consequences for beekeepers, who either have to buy queens from breeders or invest their own time and resources into producing replacement queens themselves. Research regarding the impacts of disease and immune function in honey bees has mainly been focused on workers, so while some studies have measured pathogen levels in queens and identified some ways in which virus or Nosema infections impact queens in a laboratory setting, a larger picture of how different factors interact to contribute to queen health, longevity, and reproductive success has yet to be assembled. Queens have the potential to become infected with many of the same pathogens which affect the workers in the colony, and research in other insects has identified clear trade-offs between immune defenses and reproduction. Therefore, even if queens do not have overt symptoms and do not transmit pathogens to offspring, infections could still have serious consequences for the colony via reduced reproductive output of the queens.

The overarching goal of my research project is to build a better understanding of the unique functioning of honey bee queen immune systems by: 1. investigating how various and interacting pathogens impact the physiology of queens and 2. elucidating the tradeoff between immune capacity and reproductive ability.

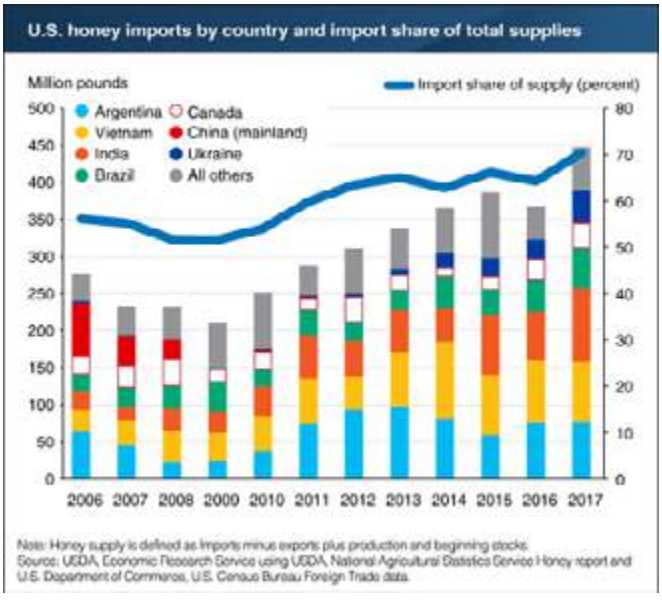
Though mature queens infrequently show symptoms of infection that are recognizable to us beekeepers, I hypothesize that there are hidden impacts on their biology and furthermore expect that these covert effects of infection could be contributing to queen failure. Towards this first aim, I have been working on a collaborative project with Dr. Alison McAfee and BC beekeepers to assess queens that beekeepers have identified as "failed." We have already found that these failed queens have reduced sperm viability compared to healthy queens, and they are currently being tested for infection by deformed wing virus, black queen cell virus, Sacbrood virus, and Nosema. I will also be analyzing various organs from these queens using mass-spectrometry based proteomics, an incredibly powerful tool that gives us insight into what is happening within a tissueat the cellular level by allowing us to compare how the proteins present change between samples. This data should be able to tell us if "failed" queens were more likely to be diseased compared to the healthy queens, and the proteomic data should provide some clues about what impact these infections had on the actual biology of the queens. Based on what we learn from this exploratory data, I would like to investigate the impacts of biologically relevant infections (i.e., any infection type that we find to be significantly correlated to queens that have failed for beekeepers) further by performing more in-depth assessments of changes to their physiology and reproductive ability. In future summers, this will look like continuing to collect failing queens from beekeepers to continue to build a picture of the factors influencing this health outcome, as well as artificially infecting queens in the lab setting, to get a controlled look at the subtle impacts of disease on queens.

As for my second research aim, uncovering the relationship between immune functioning and reproductive ability is directly relevant to improving bee health, because we cannot fully understand how best to manage and optimize our colonies' health without understanding the health of the single most important individual in that colony. This aim is exciting purely biologically as well, because the trade-off between reproduction and immunity has never been specifically investigated in honey bees, though it has been widely described across a wide variety of other insects. The compromise between these two processes is generally considered to be driven by resource allocation (reproduction and immune function are both energetically demanding processes and an individual may not be able to sustain both processes fully at the same time) and/or collateral damage of immune effectors (many processes for immune function release chemicals that can inadvertently damage the viability of store sperm). It is easy to imagine how an infection, even one without noticeable symptoms, could cause a queen to both divert resources from reproduction and damage her stored sperm at the same time, resulting in poor laying, which is exactly what beekeepers are trying to avoid. To investigate this phenomenon, there are two general types of experiments that can be performed. The first approach is to manipulate reproductive function and measure immune capacity, which is the inverse of the second in which you manipulate immune status and measure reproductive output. The experiments I have started conducting fall under the first – I am in the process of comparing the immune response between workers, virgins, and mated queens. I have stimulated their immune systems by injecting them with heat-killed bacteria, and will be evaluating the immune response in a number of ways including phenoloxidase activity (an enzyme which is essential for clotting at wound sites or around microbes in hemolymph to sequester them), hemocyte counts (immune cells in the hemolymph), antimicrobial peptide quantities, and proteomics on the fat body. The fat body is particularly interesting, because is it both the major organ in insects for innate, systemic immunity and is the site for egg yolk protein & vitellogenin synthesis for oogenesis placing it squarely in the center of the intersection between immunity and reproduction. I expect that queens will have significantly reduced immune responses to the bacterial challenge and mated queens will have a reduced response compared to virgins. I plan to follow this next year by assessing the immune response of other challenges beyond just heat-killed bacteria and plan to conduct the complementary experiments of immune challenging queens and assessing their reproductive output via measures like egg laying rate, egg protein composition, egg hatching rate, ovary size, and sperm viability. I expect to observe the trade-off in this as well, as a reduced reproductive output of these queens once their immune systems have been activated. Though I have really just begun my experimentation, I am very excited about the potential for this project to contribute significantly to the understanding of honey bee queen health and reproductive success.

THE AMERICAN BEEKEEPING FEDERATION SUPPORTS THE ANTI-DUMPING OF RAW HONEY

On April 21, 2021, the American Beekeeping Federation, the Sioux Honey Association and the American Honey Producer's Association filed petitions with the US Department of Commerce (DOC) and the US International Trade Commission (ITC) in response to surging volumes of less-than-fair-value, non-raw honey imports from five countries.

Unfairly traded imports of "raw honey" from Argentina, Brazil, India, Ukraine, and Vietnam accounted for 90% of all raw honey imported during 2020, with petitioners estimating dumping margins up to 207%. These low-priced imports are underselling U.S. beekeepers by significant margins and have depressed domestic honey prices over the last several years. Without trade relief, American beekeepers' operations will continue to deteriorate, threatening honey production and beekeepers' livelihoods.



The petitioners allege the following margins of dumping:

- Vietnam: 207.08%
- Brazil: 114.50%
- India: 34.22% to 99.16%
- Ukraine: 10.56% to 94.84%
- Argentina: 16.83% to 22.60%

Potential Trade Impact

According to official U.S. import statistics, more than 381 million pounds of natural honey valued at almost $300 million was imported into the United States from the subject countries in 2020.

- Argentina: $92,840,688
- Brazil: $69,499,194
- India: $57,382,766
- Vietnam: $60,233,997
- Ukraine: $18,622,263
- Total: $298,578,908

Products Covered by the Petition

The merchandise subject to the petition is raw honey as it exists in the beehive or as obtained by extraction, settling and skimming, or coarse straining. Raw honey has not been filtered to a level that results in the removal of most or all of the pollen. It includes all grades, floral sources and colors of raw honey and organic raw honey. Excluded from the scope is comb honey or honey that is packaged for retail sale (e.g., in bottles or other retail containers of five pounds or less).

The Process

The U.S. AD law imposes special tariffs to counteract imports that are sold in the United States at less than "normal value." For AD duties to be imposed, the U.S. government must determine not only that dumping is occurring, but also that there is "material injury" (or threat thereof) by reason of the dumped imports. Importers are liable for any potential AD duties imposed. In addition, these investigations could impact purchasers by increasing prices and/or decreasing supply of raw honey. The petitioners are seeking the imposition of antidumping (AD) duties on imports of raw honey from those countries.

Next Steps

The DOC announced its decision in May to initiate the raw honey investigations on Argentina, Brazil, India, Ukraine, and Vietnam. This means that the DOC determined that the petition satisfied the legal requirements needed to begin to investigate the pricing practices of the foreign producers in those five countries. The ITC will reach a preliminary determination of material injury or threat of material injury within 45 days of the petitions' filing. The entire investigative process will take approximately one year, with final determinations of dumping and injury likely occurring by the Spring 2022. Any antidumping duties that are ultimately imposed are intended to offset the amount by which the product is sold at less than fair value in the U.S.

Estimated Schedule of Investigations by the DOC and the ITC

April 21, 2021	Petitions filed
May 11, 2021	DOC initiates investigations
May 12, 2021	ITC staff conference
June 7, 2021	ITC injury determinations
Sept 28, 2021	DOC AD determinations if deadlines are NOT postponed
Nov 17, 2021	DOC prelim AD determinations if deadlines are fully postponed
April 1, 2022	DOC final AD determinations if deadlines are fully postponed
May 16, 2022	ITC final injury determinations if DOC deadlines are fully postponed

The ABF Board of Directors requests that all ABF members consider making a donation to offset ABF's share of legal fees for the case and return fair trade to the honey market. You can make a donation at Honey Defense Fund Online Donation Form or mail in a Printable Donation Form. The ABF Board of Directors thanks you for your support.

Commercial Beekeeper SPOTLIGHT

GENE BRANDI
Gene Brandi Apiaries
Los Banos, California

WHEN AND WHY DID YOU GET INTO THE BEEKEEPING BUSINESS?

I began working with bees in the early 1970's while going to Cal Poly State University in San Luis Obispo. I would work bees for my brother or Jack Jensen during school breaks as well as every summer. In the spring of 1973, Jack allowed me to bring 100 of his colonies to the San Luis Obispo area, on a crop share basis, where they produced a huge crop of sage honey, thanks to nearly 60 inches of rainfall that season. I also married my wife, Christine, in 1973, so it was indeed a "Honey" of a year! After college graduation in 1974, I continued to work with Jack Jensen and purchased my first hives from him in 1977. I purchased more hives from Jack in 1978, established my business, "Gene Brandi Apiaries," and have been a self-employed beekeeper ever since. The freedom of being one's own boss as well as the ability to learn more about the wonders of nature, both the bees and the plants upon which they forage, were very attractive reasons to become a beekeeper. The fact that 1978 was a great honey year due to extremely heavy rainfall got our business off to a good start.

DESCRIBE WHAT YOUR BUSINESS CURRENTLY DOES IN THE INDUSTRY.

My son, Michael, who has been working full time in the business with me since 2003 after he graduated from Cal Poly, is gradually taking over more of my hives every year and is my ultimate retirement strategy. Between Michael and me, we manage approximately 2,000 colonies when they are all alive and well. Since we live in the middle of the Central Valley of California, almond pollination is a primary focus of our business. However, we always try to produce a honey crop as well. A successful honey crop is primarily dependent upon the amount of rainfall we receive, not only for the native plants the bees forage but also for irrigated crops. Those crops depend on rainfall and snowpack in the mountains for irrigation water throughout the season.

WHAT CHANGES HAVE YOU MADE TO ADAPT YOUR BUSINESS TO THE CURRENT INDUSTRY CLIMATE?

Given the huge expansion of almond acreage in our valley (1.5 million acres), we not only pollinate almonds with all of our hives that make the grade, but we also lease bees from other beekeepers. We choose to receive the out-of-state bees we lease in late January or early February. Most of the time, we place these hives directly into the almond orchards. However, if there is an issue with dormant sprays or muddy ground, we will wait until the spraying is complete and pesticide residues have dissipated, and/or the ground has dried enough that we will likely not get stuck in the mud! The dramatic increase in almond acreage is the best thing and the worst thing to happen to California beekeeping. It is great to be able to rent all of our colonies for a good price very close to home. The downside is that most of the nation's commercial beehives are in our valley every winter and spring. Bee pastures before and after almond bloom are much more crowded, and we do not make as much honey as in the past. Much of the almond acreage currently in our valley was formerly cotton, alfalfa, melons, or other crops that our bees could work in the summer time. We still endeavor to produce a honey crop, although drought years and the diminishing irrigated summer forage make the "big honey crops" less frequent. The importance of maintaining good relationships with landowners for our locations cannot be overstated. We cherish the locations where we place our bees, many of which we have had the privilege of using for 40 years or longer.

Gene and Christine Brandi with their grandkids Oliver and Elliot

WHAT ARE THE FUTURE GOALS OF YOUR BUSINESS?

My personal goal is to continue transitioning the business to my son. Michael is a good beekeeper and has developed excellent skills and work habits that are the key to a successful future. It will be up to Michael to determine whether or not to keep the bees in California all year, as I have done, or perhaps take some of them out of state in the future.

WHAT ARE YOUR MAJOR CONCERNS ABOUT THE BEEKEEPING INDUSTRY AND HOW THEY WILL AFFECT YOUR BUSINESS?

Colony health continues to be a major issue that adversely impacts our business as well as the beekeeping industry as a whole. Keeping varroa under control, avoiding exposure to pesticides, and keeping our hives provisioned with sufficient nutrition are key components to maintaining a healthy bee business. I believe it is important to respect the territory of other beekeepers and not move bees too close to theirs. The rule of thumb I was taught is to stay at least one mile from another beekeeper's locations, and I am concerned that too many beekeepers don't observe this rule of beekeeper ethics. The bees do better, and beekeeper to beekeeper relations are much better, if this rule is followed.

ARE YOU EXPERIENCING HIGHER THAN NORMAL ANNUAL LOSSES? IF SO, WHAT ARE YOU DOING TO PREVENT FUTURE LOSSES AND HOW ARE YOU MAKING UP FOR THOSE LOSSES?

Since 2004 our winter losses have ranged from 13% to 45% which is certainly higher than we experienced in previous decades. In order to keep our colony numbers up, we purchase between 1,400 and 1,600 queens each year. Colony losses are also higher throughout the summer and many of the queens purchased are used for nucs that we install into queenless or drone laying colonies. Limiting certain pesticide exposures that are detrimental to colony health is one way to help prevent future losses. We no longer pollinate alfalfa seed or watermelons due to the heavy pesticide pressure. Our summer pollination now is strictly cantaloupe and some organic cucurbits. We encourage our almond growers to follow the *Best Management Practices* developed by the Almond Board which recommend no tank mixing or daytime spraying during almond bloom. Of course, controlling varroa populations is critical to colony health, and we treat for varroa several times per year.

WHAT IS THE STRANGEST THING YOU'VE SEEN IN A BEE YARD?

We once captured a swarm during the orange blossom honey flow that was eight feet tall from top to bottom. It was clearly a conglomeration of swarms from multiple colonies, but it was a sight to see!

WHAT IS THE MOST PRODUCTIVE CROP OR FLOWER THAT YOU'VE SEEN YOUR BEES WORK?

The most productive floral source our bees can work is black button sage (salvia mellifera), a native California plant that produces a very mild flavored, water white honey. Pure sage honey will not granulate for many years, if ever. There is a jar of sage honey at the UC Davis Laidlaw Lab from the 1880's that has darkened considerably during the past 140 years, but there is still no granulation! Black button sage plants only secrete abundant nectar in years with adequate to above average rainfall that falls at the right time.

WHAT IS YOUR FAVORITE TYPE OF HONEY?

Black button sage is my favorite type of honey not only because it tastes so good, but the fact that it is not produced every year makes me appreciate it all the more.

WITHOUT MENTIONING NAMES, WHAT IS THE BEST AND WORST BEEKEEPING ADVICE YOU'VE EVER RECEIVED?

Worst: Don't worry about Penncap-M since it's a much safer formulation of Methyl-Parathion! Some of the Best: Don't be a "windshield beekeeper" (You really need to open up the hives to see what is going on!); Take good care of your bees and they will take care of you; Never move out of a honey flow!

WHAT IS YOUR FAVORITE BEEKEEPING TASK?

Unloading bees at dawn in a beautiful, green pasture full of filaree and other wildflowers covering the hills as far as the eye can see. If the weather is warm enough for bee flight, there may be new loads of pollen coming in before I leave the yard.

WHAT BEEKEEPING TOOL OR PIECE OF EQUIPMENT DO YOU ENJOY WORKING WITH THE MOST?

I enjoy driving the forklift, and I certainly appreciate being able to move bees sitting down. Prior to 2001, I only moved bees with an electric or hydraulic boom loader, which can be a real challenge with heavy hives on slopes or in the wind!

WHAT DO YOU THINK THE BEEKEEPING INDUSTRY WILL LOOK LIKE IN THE FUTURE?

Since most of the commercially managed bee hives in the country are rented for almond pollination, the economic viability of the almond industry and the resultant demand for bees will be a major factor in shaping the future of beekeeping in the USA. Given the scarcity of good honey crops in many areas along with the current low honey prices, almond pollination is the only reason some beekeepers remain in business today. I anticipate that more consumers will demand local or regional honey which should help to bolster that segment of the market for American beekeepers.

WHAT IS THE MOST IMPORTANT PIECE OF ADVICE YOU CAN GIVE TO A YOUNG AND FUTURE COMMERCIAL BEEKEEPER?

Future commercial beekeepers would be wise to work for a well-respected commercial beekeeper for a season or two in order to grasp the knowledge necessary to be successful. Join local and state beekeeping organizations as well as the ABF! Follow the "best advice" mentioned in question 10.

WHY ARE YOU A MEMBER OF THE ABF?

I joined the ABF in 1979 in order to learn more about beekeeping and to have an enjoyable time at ABF conferences with fellow beekeepers. Many great friendships, which I cherish today, began with a casual introduction at an ABF conference. The speakers provide great information, but the frank discussions in the hallways, at the bar, or during a meal can be very educational as well. In my opinion it is important for beekeepers to become involved and support ABF in its efforts to deal with industry issues that individuals cannot effectively handle alone, especially when dealing with government agencies. I believe that all beekeepers, large or small, can benefit by becoming an ABF member.

DO YOU SPEAK HONEY BEE?

Over the last few years, due to age and decades of construction noise exposure, clear hearing has diminished to the point that hearing is now a guessing game. The game is rehearsing to the speaker what was thought to be heard and having the phrase further clarified. Sometimes the original sounds heard were heard correctly. Other times a morphed twisted group of partially understood sounds created an entirely new sentence with NEW meaning! This hearing game can turn out embarrassing if clarification is not given when odd things are seemingly said. Learning to understand bees can be equally difficult, as noted above, the hearer may be going deaf.

New parents too try to learn the language of an infant. Pet owners regularly try to learn signals and gestures to piece together a meaning. Would it not be easier if everyone could just learn "my" language as there would be no more guessing, right? A married couple can show that knowing the same language isn't enough as communication may be more than just the words spoken. An example, a marriage partner says, "go ahead and do that, see if I care" as it means many things, so pick one! If the partner picks the wrong meaning and resulting action, the relationship may be quickly extinguished.

In beekeeping, beekeepers think they "hear" the right message or meaning of what the bees are saying, only to misinterpret the message and cause further harm.

Honey bees communicate through:

- body movement
- temperature control
- pheromones
- individual activities
- social actions

Body Movement

Messages are found in shared movements of which waggle dances are only one of many communicating movements. Movements in the waggle dance may be enhanced by sharing an odor plume as well. Both waggle movement and odor are used in communicating a full message. The antennae are used for smell. Watching a bee seemingly beat another familial bee with their two antennae is actually the bee smelling the other bee and not bee abuse. The use of sharing food with the extended proboscis (tongue) from one bee to another is called trophallaxis and is done among family. Like a caring bird feeding its young newly hatched chicks. Hygienic behavior includes grooming each other, but again from the same family. Emergency Alert System for honey bees includes a higher pitch wing sound and personal space bumping warning intruders to stay away. There are many ways bees communicate with each other, and a beekeeper can observe many of them in action.

FEWD4988

Hygenic Bee Ink

KVHZ8445

Laying Worker Bee Ink

Robber Bee Ink

WLFR9740

Temperature Control

An intricate system of temperature and humidity control (HVAC system) exists inside an active colony. There is a carefully planned brood chamber (nursery) at the center of a hive blanketed with bees generating and creating humidity and heat. A lower or higher temperature and humidity rate will inadvertently kill eggs and larva. According to Arnia.co.uk, the brood nest temperature needs to be between 89.6 F - 95 F (32°C - 35°C). If the cluster humidity drops below 50% no eggs will hatch. (Doull 1976). The term thermoregulation in a bee colony is a bee's HVAC system! Bees communicate by producing heat and moisture when specific needs arise. This can be seen by bees fanning to circulate and ventilate heat. An amazing summer feature is bees bearding on the exterior of a hive entrance. Multiple reasons exist for this bearding behavior. One of them is to displace the heat from the cluster inside the hive. Watching bees perform their colony job is a way they are speaking to those who are keen enough to look for it.

Pheromones

Scent is the singular most important way a bee communicates; however, most is undetectable to a beekeeper. Pheromones are used by bees in many activities: swarming, mating, brood production, defense, foraging, and even scouting behaviors. These bee activities can be observed and identified by a beekeeper. Even though the bees are not speaking to the beekeeper directly, messages are still being shared. Bee language is learned through action, both past and present. These actions lead the beekeeper to what will happen next, if understood.

Individual Activities

There are two different types of activities in the world of a bee. One is an individual job done mostly independently of other bees. Foraging, cleansing flights, and hive cleaning are a few examples of independent jobs. These jobs are still for the colony as a whole but are seen individually. A beekeeper during a hive inspection can sample ripening nectar to determine what the bees are foraging on. Pollen being brought back to the hive shows the colony is brooding up (making young). Bees entering a cavity without pollen may indicate either the lack of brood or a robbing situation has begun. Pollen is only taken to their home colony.

Social Actions

A colony of bees is a super organism with multiple dynamics happening all the time. Watching a colony act as a group, like while swarming, appears chaotic to an onlooker but is a highly defined social activity. So dynamic, in fact, that other visiting bees may get caught up into the swarm. The bees in a swarm are separating from their original hive and are in search of a new place to live. Festooning (where bees are holding together in a tight ball or cluster where no physical structure exists) is another amazing social activity where unity is 100% required. This type of clustering may be in preparation for newly created comb cells or an unprotected temporary stopping place.

A myriad of messages are coming from a colony and from individual bees almost continuously, but the challenge is "Do you speak Honey Bee?" Over the next number of articles, caricatures will be shared depicting jobs bees are performing, and the beekeeper is to guess what is happening. Taken from "Do You Speak Honey Bee?" by Albert Chubak.

Albert Chubak owns Eco Bee Box Canada and is located in Saskatoon, Saskatchewan, Canada.

"Waggle Dancer" is one of 40 similarly created bee hat caricatures owned and copywrite protected by Albert Chubak.

BEE ENGAGED:

AN AVERAGE JOE'S GUIDE TO THREE SIMPLE HIVE ACCESSORIES

by: Joseph "Joe" J. Komperda, Sr.,
The Average Joe Beekeeper,
Certified Master Beekeeper,
Happy Busy Bees and Colorado
State Delegate to the ABF

"Beekeeping is local," but beekeeping is also dependent on the beekeeper's goals and objectives. Just as Hobbyists' and Sideliners' methods may vary from the techniques practiced by Commercial Beekeepers, hive components and accessories can vary as well. No matter your beekeeping level, your experience and expectations will dictate many of the choices you make in your use of hive equipment and accessories.

THE ENTRANCE REDUCER

One of the simplest accessories most beekeepers can incorporate is the Entrance Reducer. The Reducer is used to reduce the hive opening area, which can help decrease the amount of space the colony needs to guard. It is commonly used with the introduction of bees into a new hive or to help a weak hive protect its honey stores from robbers.

The Reducer is usually a simple 3/4" x 3/4" square wooden "stick" approximately 16.25" long that can be placed in the hive entrance. It has one or two notched openings, one about 3/8" high by 3/4" wide on one side and on the other side, a notch 3/8" high and 1 1/2" to 3" wide (plus or minus). With the smaller notch described, 0.28 square inches of the opening is provided, and the wider notch provides between 0.56 to 1.13 square inches of clear space. By orienting the Reducer to use neither opening, it can be used to lock in your bees. Likewise, it can lock out rival bees and other pests such as wasps, yellow jackets and wax moths.

Dr. Tom Seeley's book, Honeybee Democracy, notes that the optimal opening size for a hive is about 15 cm2. For those of us using a non-metric measurement system, that equates to about 2.33 square inches. If we look back to the prior paragraph, you will note that with the "standard" Entrance Reducers, the largest opening is about half the optimal opening size.

In nature, hollow tree cavities have openings of various sizes, and Mother Nature does not always provide optimal conditions. The bees will choose a cavity for many reasons, but we can "determine' the entrance size when we

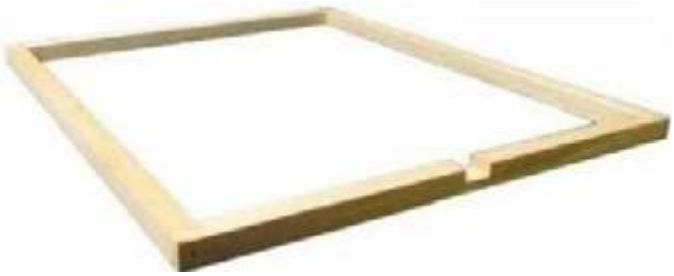
provide the hive. A sub-optimal or excessively-sized entrance could cause the colony to abscond to find a more suitable home. Not using a Reducer can result in an entrance size of between 6 and 12 square inches, depending on the type of bottom board in use.

Most beekeepers do not recognize that some bottom boards provide a ¾" high opening while others have a 3/8" opening. With the taller opening, the Entrance Reducer will slip under the bottom box's front edge, while with the smaller height opening, the Reducer butts up against the front wall of the bottom box.

No matter which type of bottom board you are using, if you want to provide an optimal entrance, you may need to consider opening one of the Reducer's entrances to about 6" wide. You may also want to remove the Entrance Reducer during strong honey flows with heavy traffic. For the rest of the year, you may consider leaving your Reducer in place. On a side note, using an Entrance Reducer may lessen the need to use a mouse guard in areas where mice invasions are a concern.

THE IMIRIE SHIM

The Imirie Shim is a frame made from 3/4" x 3/4" wood with the outside dimensions of an 8 or 10 frame hive that can be used in a variety of ways with the Langstroth hive. Its design is credited to the late George Imirie (thus the name), a well-known beekeeper from the Northeast United States in the late 1990s/early 2000s. Although simple in design, it has numerous uses.



The Imirie Shim can be placed in the same configuration in the winter and spring, but winter patties or pollen patties (dependent on season) can be put on top of the frames for access by the bees below. It can also double as a spacer to allow sugar syrup baggie feeding. If you are using formic acid pads for mite treatment, you may decide to place the Shim between the brood boxes. This will create more space for the mite treatment pads.

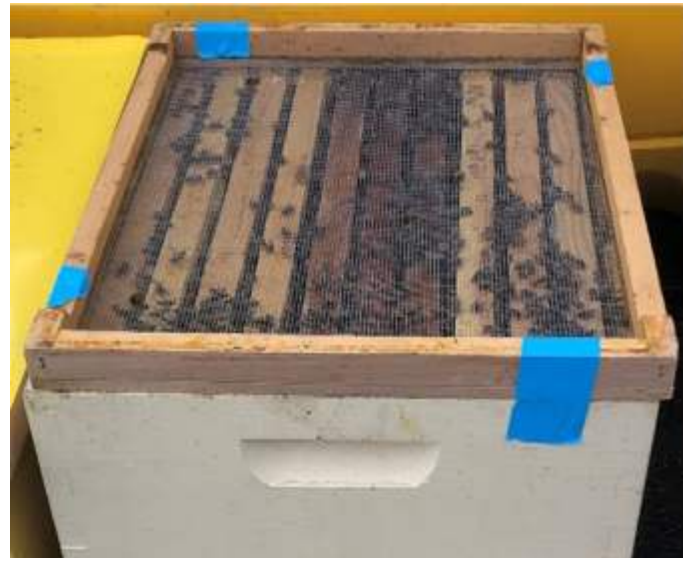
Additionally, the Imirie Shim can be placed between the bottom board and the brood box in the spring or summer to add a little "air" space like a "slat board" but not as tall. Alternatively, it could be placed between brood boxes, especially in the spring, to build some drone comb within the void. This brace comb can be culled as a simple means of mite control.

In late summer or early fall, the Shim can be positioned on top of the top brood box's frames, providing a space for placing tray-based mite treatments that require top access by the bees. The inner cover is placed on top of the Shim, and the bees can access the removal treatment, thus dispersing the treatment.

There are probably numerous other uses for the Shim as beekeepers seem to echo the saying, "necessity is the mother of invention." This versatile accessory has been modified to add an entrance (or escape) hole and is sometimes notched like some inner covers (see included photos). If you have not used the "simple" Imirie Shim, you may want to consider it during your next beekeeping outing!

THE INNER COVER

As its name implies, an inner cover is just that, a cover on the inside of a hive stack. Traditionally used as a means of limiting the bees' ability to "glue" the outer (or telescoping) cover to the top of the stack using propolis, the inner cover can also perform other functions.



Up to six Boardman Feeders can be placed on top of the inner cover and surrounded with another hive box to provide in-hive feeding of 1 1/2 gallons of syrup using quart jars. Likewise, up to five paint can feeders supplying five gallons of syrup can be placed on the inner cover. This is especially useful for trying to quickly build up winter stores in the fall. For winter, pollen patties, fondant or granulated sugar can be placed in the inner cover for solid feeding during extended winter cold spells.

With some modifications, the inner cover panel can be replaced with a piece of Plexiglas or clear acrylic to provide an insight into the cluster's location in late winter. In the early spring, the beekeeper can see if the colony is "boiling over" the top box's frames in a two-deep overwinter configuration. Replacing the wooden panel with standard window screening or number eight hardware cloth provides ventilation for warmer climates. This same screened inner cover can be used when transferring hives as air circulation may be enhanced when used alone or in conjunction with a screened, bottom board.

As always, there are probably additional applications and modifications of these Three Simple Hive Accessories. If you have other ideas, forward them to *AvgJoeBeekeeper@gmail.com* for consideration for use in a future article.

#BeekeepingTips #avgjoebeekeeper

SOUTHERN REGION APIARY INSPECTION PROGRAMS

by: Mary Reed (Texas), Brandi Stanford (Florida) & Jonathan Nixon (Georgia)

Since 1938, the Apiary Inspectors of America (AIA) has been working to support beekeepers and the beekeeping industry by promoting better beekeeping practices and ensuring healthy honey bee populations throughout North America.

Ultimately, the AIA would like all participants in the beekeeping industry to appreciate the wealth of resources these programs have contributed over the past century (or more) and continue to provide today. These essential programs play a vital role in maintaining the health and integrity of the beekeeping industry.

In this fifth part of the series, we continue with the Southern region of the U.S., highlighting unique aspects of select individual state programs, stakeholder collaboration efforts, and some of the dynamic work performed by Apiarists.

TEXAS

The Texas Apiary Inspection Service (TAIS) was established in 1910 due to legislature enacted to suppress American Foulbrood. From the beginning, TAIS was placed under the purview of Texas A&M University and it is still there to this day. TAIS's main office is located in College Station and currently has three inspectors, in addition to the Chief Apiary Inspector, who cover the entire state. Annual inspections are primarily conducted for commercial operations, but TAIS will visit any beekeeper that requests its services. During an inspection, inspectors will look for any signs of pests or diseases within hives and across an operation. In addition to inspections, TAIS also oversees the movement of honey bee hives in the state and across state lines. Permits are required for beekeepers that move their hives across county lines, as well as in and out of the Texas.

Inspection in Texas

Texas has a great mixture of commercial, sideliner, and small-scale beekeepers. Every year, about 150 commercial beekeepers spend at least part of the year in Texas. Some migratory beekeepers will come to Texas in the fall to over-winter hives before heading to California for almond pollination in January. However, the majority of the commercial beekeepers are here in the spring to make splits, raise queens, and take advantage of the nectar and pollen resources that are available. Several

beekeepers travel around the state for pollination contracts, servicing crops such as cucumbers, pumpkins, blueberries, and watermelon. All beekeepers take advantage of the various nectar producing plants (such as mesquite, huajillo, and Chinese tallow) to make a honey crop. Apiary registration is not required in Texas, so it's difficult to provide an exact number of beekeepers and hives that operate in the state. However, it is estimated that there are between 5,000 and 6,000 beekeepers in Texas at any given time. As for the number of hives in Texas, the apiary program typically certifies about 400,000 colonies yearly through inspections.

Although TAIS's primary role is to conduct health inspections, TAIS also plays a prominent role in beekeeper education. In addition to providing presentations to local and state beekeeping associations, TAIS helps manage the Texas Master Beekeeper Program, as well as work with Texas extension agents to help provide beekeeping educational programs to their local communities. TAIS also collects samples for the USDA National Honey Bee Survey, as well as monitors for invasive wasps and bee species in collaboration with the Pennsylvania Department of Agriculture.

FLORIDA

Florida's Apiary Inspection program, which started in 1919, has ten field inspectors, two inspection supervisors, and one state apiarist. Our role in apiary inspection is primarily regulatory, so we look for pests and diseases, such as American Foulbrood, during inspections. Additionally, we regulate the location of managed bee colonies and check to ensure the apiary locations are compliant with state regulations. We issue certifications to beekeepers to facilitate movement between states for various honey flows and pollination seasons, provide inspections and certifications for beekeepers who choose to participate in the "California Ant-Free Certification Program," and conduct sampling for queen certificates for those planning to sell queens. Although it is not our main focus, we also offer educational outreach through conferences, classrooms, beekeeper meetings, and one-on-one with beekeepers (It's hard not to when you're face to face with beekeepers with your hands in their hives!). Florida

Florida Hobbyist Inspection

has mandatory registration laws, meaning each beekeeper having honey bee colonies in the state must register with the Florida Department of Agriculture and Consumer Services. With that said, we currently have 4,927 registered beekeepers in the state. Of those registered, about 550 are commercial, leaving the rest as backyard or sideliners. In 2006, Florida had just over 600 registered beekeepers who were mostly commercial. However, after Colony Collapse Disorder came about putting extra emphasis on saving the bees and helping the pollinators, the number of backyard beekeepers skyrocketed in our state and it continues to climb each year. We had 797 new registrations in 2019 and 876 new registrations in 2020 – those are HUGE numbers! There is still a lot of interest in getting involved with beekeeping, which is very exciting to see! Beekeeping is a year-round venture in Florida, due to our mild winters and subtropical climate. Some of the main crops that are pollinated in the state include blueberries, watermelons, and squash. Florida also provides around ten percent of the colonies needed for almond production in California each year. Many of the commercial beekeepers here load their colonies up on trucks and ship them out in January and February for pollination services during the almond bloom. As for honeys produced here in Florida, the major flows we have are: Gallberry, Orange Blossom, Palmetto, Wildflower in various seasons, and Tupelo up in the Apalachicola region. Lastly, our apiary inspection program is fortunate to be housed near and collaborate with researchers and extension specialists at the University of Florida Honey Bee Research and Extension Laboratory on many projects impacting Florida beekeepers.

GEORGIA

The Georgia Department of Agriculture, Plant Protection Division has eight inspectors who work within the apiary industry. We are busy year-round with honey bee inspections and services. In January and February, we are inspecting shipments of bees headed to California for almond pollination. We inspect at least 200 shipments to California each year. Because of our mild winter season, many northern beekeepers overwinter colonies here. Spring and summer bring inspections for migratory beekeepers leaving Georgia to go to back north (Maine, Massachusetts, Vermont, New York, Pennsylvania). From August to November, we are performing annual inspections on our queen and package producers, while also collecting samples for the USDA Honey Bee Survey. We have a large number of beekeepers in the state, most of whom are hobby beekeepers, but we have a significant number of package and queen producers also. Many of those commercial producers have been in operation for generations in southeast Georgia. The southeast part of the state has many native honey plants and some beekeepers specialize in comb honey production, while the north Georgia mountains are home to sourwood and basswood honeys. Georgia is an important and unique contribution to the apiary industry of the U.S. There has not been any recent changes or amendments to Georgia's laws regarding honey bees. As the Lead Apiary Inspector, I schedule annual inspections for licensed apiaries, coordinate the collection of samples for the state's USDA Honey Bee Survey, investigate pesticide complaints involving honey bees alongside our pesticide division, assist beekeepers with any issues that may occur throughout the year, and perform inspections for interstate movement of colonies.

FOLLOWING THE BLOOM

by: Dewey M. Caron, PhD

The weather during almond pollination season was relatively decent this year. Colonies continued their spring buildup courtesy of almond pollen (Almond is a peach relative, and many beekeepers recognize the value of fruit bloom in spring buildup of colonies). Two to two-and-a-half million colonies, 80% of commercial beekeeper bees, 88% of the potential colonies available for pollination service, were involved this year, according to Project Apis m. Colonies from 40 states were needed for this pollination event. The estimated 1 million CA colonies are insufficient to meet almond pollination demands. Some 4,900 trailer loads of bees (each with 400-450 colonies) are moved to CA for this monumental task.

For those unfamiliar with the transport of bees to the annual almond pollination event, Project Apis m Winter 2021 Buzzwords references a short informative YouTube of the Browning Honey Company move of bees from overwintering Quonset huts in Blackfoot, Idaho to almond pollination. *https://www.youtube.com/watch?v=1IWN7UB0rJ0*

Colonies in overwintering sites that might be adequate to meet minimum size are selected for transport. Some beekeepers can adjust some colony sizes before transport. In California, colonies are immediately stimulated and then sized in holding yards before movement to the orchards. Virtually all colonies will be treated for mites, many with amitraz; those that are overwintered in buildings are often treated with oxalic acid upon removal. Colonies are graded in the first or second week once moved onto pollination sites.

Moving into Pear John Jacob

With strong brood development in almonds, colonies need almost immediate attention following bloom. Some beekeepers will shake adult bees and remove brood frames to sell to queen and package bee producers in California. Strong colonies may be converted to cell builders to rear queens and/or used to shake packages before removal from California. Those colonies returned to more southerly locations might subsequently

Radish seed pollination

be shaken for packages, divided to form nucs or used to rear queens before transport northward. Sixty percent of the colonies will eventually reach the upper Midwest for summer honey production.

Colonies are split to help reduce swarming. Splits are used to replace overwintering losses or sold to other beekeepers starting bees, once requeened or to beekeepers making up their winter losses via nuc purchase. A considerable number of these same colonies will be subsequently used for another pollination rental. For example, the estimated 250,000 colonies of Pacific Northwest beekeepers (Oregon, Washington and Idaho) are used for an average of six additional rentals in fruit, berries, oil/vegetable seed and oil crops following California almond pollination. Over 20 different crop rentals in all. These colonies need to be broken down, a percentage resized and requeened and then readied for movement. In some seasons, colonies will be needed almost immediately upon return from CA for pear/plum/fruit rental or blueberries. This season, a slowly developing spring provided a larger window before the colonies had to be moved to their next pollination stop.

Stimulating, selecting, transporting then again stimulating, selecting, transporting, with mite treatments performed in between when possible, is needed to ensure adequate pollination colonies for each rental. A glimpse of pollination by Pacific Northwest (PNW) pollinators was published in the May 2020 American Bee Journal from the annual (35 years) Oregon State University pollination economics survey. For PNW beekeepers, the annual business of bees is one move after another. Annual colony costs average $241 (range $192-$400). Pollination fees and use of strong post-almond pollination colonies for the rearing of queens and sale of nucs supplies average 75%+ of annual income to sustain the business of bees.

QUEEN Committee Report

by: Anna Kettlewell, *American Honey Queen Program Chair*

We are a quarter into our year, and Queen Jennifer and Princess Virginia have promoted through virtual and in-person platforms this year. Areas of the country are opening up, and we are happily accepting promotional requests for in-person and virtual platforms. As of March 31, the Queens have reached ten states, with several more scheduled. With lofty goals of presenting or visiting every state and territory in the nation, the Queens need all our ABF members' help to make this goal a reality.

Thankfully, the American Honey Queen Program is supported by individuals nationwide. We have the honor of seeing many of you at the ABF Annual Conference & Tradeshow each year. The program is also supported by so many individuals who are unable to make it to the ABF Conference. American Honey Queens and Princesses have traveled to states for years, meeting with and promoting alongside beekeepers who have never attended an ABF Conference. Some are longtime members, while others simply are longtime program supporters. The best scenarios are when those longtime supporters become ABF members due to an American Honey Queen or Princess visit or when a longtime member decides to come to an ABF Conference because of that Queen or Princess visit.

We've experienced this wide range of support from members nationwide so far this year. From those of you who typically attend the ABF Conference to those who do not, thank you for your generous support of the American Honey Queen and Princess. From tours of operations to the opportunity to speak to your local organizations, we greatly appreciate all our members to generous honey donations. The American Honey Queen Committee asks that you continue to support the Queen and Princess throughout the year. If you can schedule an in-person promotion with them, it would be amazing. If you can schedule a virtual presentation or interview for them throughout the year, that would help achieve their goals. Consider seeking our unique finds for donations to the fundraising auctions at the ABF Conference to benefit the Honey Queen Program. Now would be a great time to start preparing for the American Honey Show Auction. With 18 different categories, including honey and beeswax, there are a lot of options. Consider holding some of your finest early summer honey and some of your fall varieties and enter multiple categories in the show at next year's ABF Conference. Proceeds from the American Honey Show Auction benefit the Queen Program annually.

We look forward to connecting with you throughout the rest of this year. The American Honey Queen and Princess look forward to promoting our products nationwide and supporting the ABF wherever and however they can. Please contact me as promotional and educational opportunities surface in your region! Contact me at *honeyqueen99@hotmail.com* to schedule promotions in your area!

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AMERICAN HONEY QUEEN REPORT

Jennifer Hinkel

Spring is in full swing and so are our promotions keeping both Princess Virginia and me busy. We have set queen-sized goals this year to participate in promotions in all 50 states and surrounding territories! We cannot wait to share our important messages with the public, broadening people's horizons about honey's diversity!

In my last article, Princess Virginia and I were in Wisconsin from January 27 - February 2 for training. Our training covered topics like product demonstrations, utilizing social media channels effectively and preparing for print, radio and TV interviews. As part of training, I participated in seven virtual elementary school presentations on February 1 and 2. The 170 Wisconsin students of South Milwaukee, Berlin and Redgranite learned more about their state insect and had their many intriguing questions answered. Young bee enthusiasts are encouraged to visit our Buzzing Across America blog (*www.buzzingacrossamerica.com/*) to find more fun and educational activities and content.

Queen Jennifer participated in an hour-long radio interview with 103.5 The Sun in Sun Prairie, Wisconsin.

The American Honey Queen was on the air! February 3rd, I participated in a nine-minute-long radio interview with KQ98 in Spring Grove, MN. This radio interview was shared and broadcast on 21 additional radio stations in Wisconsin and highlighted in an online article on the Midwest Farm Report. The interviews did not stop there! To highlight the American Honey Queen program and the beekeeping industry, I spoke with *The County Today* newspaper to create an article to be shared with their approximately 10,000 readers.

It was not long after training wrapped up that I connected virtually with over 60 students on February 5th. The presentations for the students of Fellows Elementary of Iowa and the St. Lambert Elementary of South Dakota emphasized how beekeeping changes from season to season. I incorporated information from my training, highlighting the different care and techniques used by beekeepers in northern climates and the varying climates around the United States.

By far, some of the sweetest individuals to speak with are American beekeepers. It was a great pleasure to speak with the Brown County Beekeepers Association in Green Bay, Wisconsin. During our virtual meeting on February 17, I shared about my promotions so far as well as highlighted the goals we have this year. Princess Virginia and I would love to speak to your beekeeper's group this year, so contact Anna Kettlewell to set up an event with your group. Thank you to Dave Elsen for arranging my presentation to a hometown group.

I stepped virtually into Warren East High School in Bowling Green, Kentucky, for two days of presentations and cooking demonstrations for the family and consumer science classes. During these four presentations on February 23 and 24, we covered topics like how to cook with honey, what it takes to be a beekeeper and multiple uses for honey in cooking demonstrations. If you want to try one of the recipes that I demonstrated to the classes, check out the honey glazed snack mix on our Buzzing Across America blog (*www.buzzingacrossamerica.com*).

On March 3 and 4, Princess Virginia and I were in Colorado for two days of media interviews and learning opportunities. As part of this promotion, we toured Local Hive Honey to learn about the process of honey procurement and packing on a commercial scale. To highlight our time with Local Hive Honey and our goals for promotions, we participated in a joint interview with the Greeley Tribune newspaper. While honeybees are our favorite pollinator, we toured the Butterfly Pavilion, the first insect zoo, to learn more about the many other pollinating insects across the United States. Besides learning about the Butterfly Pavilion and the work that they do to promote

While promoting in Colorado, Queen Jennifer participates in a media segment with beekeeper Mario Padilla of the Butterfly Pavilion about the role that honey bees play in pollination.

pollinator preservation, we participated in a video interview with the head beekeeper to highlight our role in promoting the beekeeping industry across the country. Check out the Butterfly Pavilion on Facebook (*www.facebook.com/ButterflyPavilion*)

We are excited to teach and speak at a variety of promotions and would love to come to your state. If you are interested in inviting Princess Virginia or myself to your event, please contact Anna Kettlewell at (414) 545-5514 or *honeyqueen99@hotmail.com*. Have a sweet day!

to see our interviews. Thank you to Local Hive Honey for inviting us to visit your operation to learn more about this sector of the honey market.

I buzzed on to the March 18 Heartland Beekeepers Association meeting for a presentation to club members. During my opportunity to talk to this group of southern Florida beekeepers about the American Honey Queen program, I also encouraged members to reach out to set up a promotion at local festivals and events. Thank you to Amanda Johnson for arranging my presentation.

All things honeybees were highlighted in the hour-long radio segment "Now You Know." The March 19 radio interview with 103.5 The Sun in Sun Prairie, Wisconsin, allowed me to expand on some of the fascinating information about honeybees and beekeepers and the role that the over 200,000 beekeepers play in managing hives across the U.S.

As we all look forward to the blossoms of spring and summer and all of the beautiful things that come with it, don't forget to include us at your meetings, festivals, or farmer's markets! With your help, we can reach our goal of all 50 states and surrounding territories because together, we can make 2021 extraordinary! Be sure to follow our Facebook page (*www.facebook.com/AmericanHoneyQueenProgram*) as well as our Buzzing Across America blog (*www.buzzingacrossamerica.com*). To schedule a promotional event with Princess Virginia or me, contact Anna Kettlewell at 414-545-5514 or *honeyqueen99@hotmail.com*.

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AMERICAN HONEY PRINCESS REPORT

Virginia Allen

Hello ABF members! Queen Jennifer and I hit the ground running at the beginning of the year and have participated in many events despite the current pandemic. Let's start back in January.

Soon after the ABF's Annual Conference & Tradeshow, three newspapers published articles announcing our availability to speak about topics related to beekeeping. These articles were valued at just over $870 of free publicity for the industry!

Our official training began with a week-long visit to Wisconsin from January 27 through February 2. As this was my first visit to Wisconsin, I was pretty surprised to find snow still on the ground! Once Jennifer and I arrived, Honey Queen Boot Camp began immediately with cooking the recipes from our American Honey Queen brochure and learning to keep records of our events and media publicity. Queen Jennifer and I were given top-notch training by many of the Honey Queen Committee members. The topics covered everything we needed from setting goals for the year, crafting key messages for media, and even practicing media interviews with a retired news anchor. It was a great opportunity to meet the team and set a vision for the upcoming year.

Princess Virginia practiced interview skills with retired news anchor, Bill Graffin, during training in Wisconsin.

We toured Henry's Honey Farm in Redgranite, Wisconsin, and learned about commercial beekeeping and the many different challenges commercial operations face. My background is in hobbyist beekeeping, so the tour was invaluable. To round out the training trip, I gave six presentations to three elementary schools through virtual platforms. In these classes, 148 students learned about the important work of honey bees through pollination. Thank you to Anna Kettlewell for setting up these events and hosting us during training.

Upon returning home, I immediately started work on two video projects. In the first video, I introduced myself and my background for the American Honey Queen YouTube channel. Be sure to check this out and the many other videos that you can use in your presentations on the channel *www.youtube.com/watch?v=aUFgfAgoPjo!* The second video was created for the February 10 meeting of the Hot Springs Village Audubon Society, where I talked about the fascinating world of honeybees. This organization in Arkansas has been meeting virtually, and I was their guest speaker. We are eager to share similar presentations virtually and in person this year.

My next trip was to Colorado from March 2-4, where Queen Jennifer and I toured Rice's Lucky Clover Honey (Local Hive) and interviewed with local media. The first interview took place the day we arrived with reporter Anna Delaney from the Greeley Tribune. Her article focused on our work as spokespersons for the American Beekeeping Federation and our promotions and training in Colorado. This article was later reprinted by Bee Culture Magazine, reaching over 5,181 readers! The next interview was with the world-renowned Butterfly Pavilion in Westminster, Colorado. During this three-and-a-half-minute video interview, I spoke about the benefits of honey bee pollination and that one-third of our food is pollinated by insects. At the Butterfly Pavilion, we learned about their partnership with Local Hive, in which Local Hive gives a portion of their proceeds to Butterfly Pavilion, supporting pollinator efforts. Thank you to Tony Landretti, Nancy Burnett, and the rest of the Local Hive team for hosting us during our visit and for setting up these interviews and tours.

The following week, I virtually visited Colorado and South Dakota. I reached 120 students by speaking to two elementary schools about what a honey bee is and how she is a productive member of her colony. I always enjoy showing the kids

Princess Virginia interviewed with Head Beekeeper at the Butterfly Pavilion in Colorado about the benefits of honey bee pollination.

the parallels between their house chores and the worker bee's jobs. Just like us, when the worker bee gets older, she is given more responsibility to guard and forage for the colony!

On March 22, I Zoomed (virtually) over to Carson City, Nevada, for the school district's career fair. I gave two presentations and showed high schoolers the many jobs in the beekeeping industry, including beekeeping, heavy machinery operators, administrative skills, in addition to product production, packaging, and marketing. Many of the students were interested in agriculture and found this presentation very helpful by opening their eyes to see how and where honeybees are touching their lives. I'd love to share this information with more schools throughout the nation.

Some of my upcoming visits are with my city's mayor, high school presentations in Connecticut, and beekeeper meetings in Texas and Ohio. Stay tuned and check out the American Honey Queen Facebook page *https://www.facebook.com/AmericanHoneyQueenProgram/* for event updates as they occur.

It has been a wild ride for the first quarter, but I have enjoyed every moment and am looking forward to your state's upcoming events. If you have an event or group that you would like us to visit, please contact Anna Kettlewell at 414-545-5514 or *honeyqueen99@hotmail.com*.

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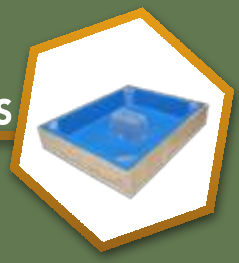

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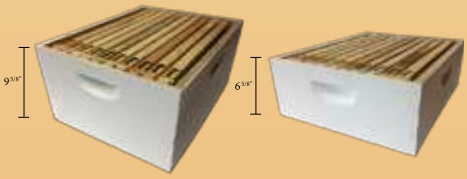

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These donations enable ABF to fund programs and services that benefit members and the American beekeeping industry.

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- Armelde Pitre, CT
- Rick Sutton, KY
- Virginia State Beekeeper Association – *In the name of Tammy Horn Potter*
- Phoebe Longhi, CA
- Allison Marshall, KS
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- David Shenefield, IN
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- Tom May, FL
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