Bee friendly

A Newsletter of the New Mexico Beekeepers Association Spring 2022 www.nmbeekeepers.org

Welcome to the New 2022 Board

e are confident that everyone who attended the NMBKA 2022 Annual Meeting on Feb. 17th would agree that it was an exceptional meeting. In addition to hearing the year-end reports from the president and treasurer, review of

the bylaws, and plans for the upcoming CBeeks year, attendees were treated to a lively presentation by Georgia master beekeeper Julia Mahood, who has become our (and the country's) goto authority on those boy bees-the drones. Julia's talk is now posted on the website along with the other six Feb. 5th winter conference speakers for your enjoyment.

The grand finale was your bringing by unanimous acclamation a fantastic slate of candidates onto the

> NMBKA board. We look forward to a very good year.

Congratulations to the 2022 board.

Clockwise from the top: Christa Coggins, Melanie Kirby, Jade McLellan, Courtney Bradley, Kurt Ferreira, and Anita Feil. Center is Bob Reneau.

Check out page 3 for more on the new members plus other board comings and goings.

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Spring 2022

Our newsletter is a quarterly publication of the New Mexico Beekeepers Association (NMBKA).

NMBKA 2022 Board:

President Bob Reneau, Santa Teresa

Vice-President Melanie Kirby, Santa Fe

Treasurer Courtney Bradley, Edgewood

> Secretary Anita Feil, Las Cruces

Members-at-Large: Kurt Ferreira, Los Ranchos Christa Coggins, Santa Fe Jade McLellan, Albuquerque

> Layout, production: Kathy Grassel, editor

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Message from the Outgoing President

By Steve Black, CBeeks Director



s I look back on my last two years as NMBKA President, I am proud of the work that our board and committee members have accomplished. Some highlights include:

• We learned how to hold, and executed three "virtual" conferences, utilizing Zoom Webinar, bringing in fantastic speakers from across the US.

• We held three "virtual" silent auctions which were a lot of fun, and raised over \$10,000 for NMBKA.

• We retooled our Certified Beekeeping program, which normally is completely in-person, to remote learning and with restricted hands-on hive time (based upon CDC guidelines).

• We have an updated, improved website, and an increased our social media presence (Facebook and Instagram).

• We engaged with NM State Legislators on potential legislation restricting use of neonicotinoids.

As we seem to be heading out of COVID restrictions this spring, we are hopeful that our Summer 2022 conference will be in-person, as we all enjoy getting together and sharing beekeeping stories with beekeepers (my non-beekeeping friends now just roll their eyes when I talk about my bees).

While I am stepping down as President, I have decided to take on the leadership of the CBeeks program. Working with a great group of Education Committee members and building on the work that Mark and Beth Sommer did for the last four years, I look forward to participating in teaching new beekeepers and watching their faces light up when they participate in their very first hive inspection.

I thank my fellow board member for their support these last two years. Having met the five new members recently elected to the board, I leave office confident that NMBKA is in good hands.

Welcome Your Newly-Elected Board Members

Courtney Bradley, Edgewood, NM

Courtney Bradley was born and raised in Edgewood, New Mexico. She graduated from Moriarty High School and attended the University of New Mexico. She met her husband of 17 years in Albuquerque during college and together they have four teenagers±-two girls and two boys. She has worked as the Court Clerk for the Edgewood Municipal Court for over three years now. She works part time for the court and it's a good thing because she needs the extra time to care for her small rescue farm that includes nine horses, six goats, three pigs, a donkey, 13 ducks and many, many chickens. Along with the farm animals, she also rescues handicapped dogs; her husband says she treats them better than her own kids! In the past she has volunteered for the Edgewood Animal Shelter and also worked as a lactation consultant for new mothers. Courtney enjoys riding her trail horses, running, crocheting, reading, and of course beekeeping. She speaks fluent Spanish and has run three marathons and three La Luz Trail Runs. She loves living in the country and appreciates family (animals included) more than anything!

Christa Coggins, Santa Fe, NM

Christa Coggins and her husband David Franklin bought a small ranch in Mora County in 1995 and moved to Santa Fe in 1998 where she and her husband raised their kids in the Santa Fe Public Schools. Raised in Massachusetts, Christa graduated from Yale University then served in the Peace Corps in Mauritania. Upon her return to the U.S., she got a Master's in Public Health from the U of Michigan and worked for decades in international AIDS research. Once arrived in New Mexico, her work focused on public health evaluation in local clinics. Christa retired in September 2021 from nearly 13 years with the Santa Fe Community Foundation where she served as Vice President for Community Philanthropy. Christa has an in-depth knowledge of nonprofits in northern New Mexico, and of the local donor community. Christa and her husband raise yaks in Mora and are smallscale top bar beekeepers for the past 14 years±—first in Santa Fe and now in Mora. Christa is also a wannabe quilter and knitter, and is fluent in Spanish and French.

Kurt Ferreira, PhD, Los Ranchos, NM

Kurt Ferreira was dragged to New Mexico from the coasts of New England at the age of 15. Slowly, mountains replaced beaches as Kurt's favorite place and he fell in love with the Southwest.

Kurt has a BS in Mathematics and a BS in Computer Science from New Mexico Tech and a MSc and PhD in Computer Science from UNM. Currently research staff at Sandia National Laboratories and a Research Associate Professor at the University of New Mexico, Kurt's research interests center on design and construction of massively parallel computer systems. Using his knowledge of behavior of social insects, Kurt has been investigating how these large-scale computer systems can function in an efficient manner analogous to a honeybee colony.

Kurt has authored over 100 scientific articles and is co-author of two books. This will be Kurt's third season keeping bees and his second year as a student in the Certified Beekeeping program. Kurt keeps both Langstroth and top bar hives and is currently experimenting with overwintering nucleus colonies to use as resource hives.

Jade McLellan, Albuquerque, NM

Jade McLellan has a BS in Biology and Sustainability Studies from UNM, and is the Poetry Editor for the Santa Fe Literary Review. A beekeeper since 2019, Jade is passionate about exploring the relationships between pollinators, place, and people. When not playing games or nerding out about cheese, she can be found deep in a book, preferably with tea and her cat close by.

Board members carrying on ...

Bob Reneau passes the Treasurer torch to Courtney Bradley to become President; Melanie Kirby assumes the Vice-Presidency, and Anita Feil remains as Secretary.

A fond farewell ...

... to Steve Black, Amy Owen, Allison Moore, and Anita Amstutz, who have departed the board, but intend to remain active on our many busy working committees and the certification program.

Issues with Package Bees: Caveat Emptor

By John Gagne, San Juan Apiaries, Santa Fe, NM



ccasionally, people ask me what happened to their package bees and why they didn't make it. Several years ago, I commented in one of the group forums about what can go wrong with buying and installing a package of bees in order to get started in beekeeping. Michael

Palmer, a very experienced beekeeper from Vermont, has a short video about why he doesn't like package bees. He speaks from many years of experience raising and keeping bees alive, and I encourage people to listen to what he has to say here about package bees.

I remember many years ago getting started in beekeeping back East and buying package bees for my own apiary as a means of making increase and expanding my colony numbers. At the time it was the only means available to me as I was still getting my feet wet with beekeeping. Currently, the package bee industry has a hard time delivering enough packages to people wanting to purchase bees. Likewise, purchasing a nucleus colony of bees as an alternative is difficult (at least in our area) as they are in very short supply. Not wishing to offend anyone, I will add that I am not advocating for not purchasing packages, but I would advise, just like buying a car, it is wise to check under the hood to see exactly what you're getting before driving off.

will include nurse bees, older foragers, some drones, and occasionally even a virgin queen or a rogue freeroaming mated queen (as well as varroa mites). The bees surrounding the confined queen are not her progeny. Queens for these packages are reared as early as possible by the package producer himself, or purchased from another queen producer, who is cranking out as many early queens as possible. Often times mating conditions are not so favorable, due to unsuitable weather. Generally, queens produced for the package bee industry are not the "cream of the crop" so to speak, as the object is to produce as many as possible, as fast as possible, to keep up with the early demand. In contrast, ask any reputable queen producer the nuances of trying to rear the best queens possible, under optimal mating conditions. Queens reared and nurtured under these conditions are allowed to spend numerous days in a mating nuc to show viable egg laying capacity, and to prove to the producer that they are worthy of caging and selling. These are not the "puppy mill" queens often included with your packages.

Transportation

The journey of your ball of bees in a cage is critical to the life expectancy and growth potential of the future colony. The trip to your door is often a cold bumpy ride under not so favorable conditions. A typical timeline would be: The producer makes the package up one day. The distributor picks them up the next day. Transportation to the point of distribution then takes another 2-3 days. You arrange to pick them up a day later, and then deliver them to your final destination.

Origination

Package bees are made up early each spring by commercial beekeepers as an income source, as their bees are

in abundance at that time of year. If you have never seen how this is done, watch an online video sometime showing how they shake bees through a funnel, and then add a caged queen into the middle of the cluster, along with a can of sugar syrup to help them on their journey. Along with a caged queen, your package



Installation / Queen Introduction

Transferring your bees from the package into your equipment and installing the caged queen should be done expeditiously. Here is where you could ask five different beekeepers how best to accomplish this task, and you could receive 10 different answers. The goal is simple: provide a new home

for the bees and allow them to release the queen (without rejecting her) so that she can then begin egg laying in order to produce new bees to replace the dwindling bee population that has been dying off. Concerning our timeline to this point, let's add 2-3 days for the queen to be released and accepted, and then perhaps another 2-3 days (or longer) before she lays her first egg. I will interject at this point, that here is where many new beekeepers make their first big mistake: Wanting to make sure that the queen has been released, and insisting upon placing their eyes on her to make sure she's okay. While it is perfectly normal for any new beekeeper to want to start poking around in this manner to satisfy their curiosity, it may often lead to her early demise. Checking the queen cage the next day, poking a hole in the candy so she can be released sooner, and any other number of reasons to invade the bees at this point is ill-advised. These interruptions could very well lead to the bees rejecting (and balling) your precious queen. A better goal is to keep the feeder jar full of syrup, and allow the bees to start drawing comb and storing resources.

Nurse Bees

Mike Palmer speaks logically and intelligently about the state of a newly installed package of bees as an "un-

balanced" condition, as they attempt to transition into a stable colony. A well-balanced colony is: a young laying queen, adequate nurse bees to tend to the eggs and larvae, and numerous foragers to seek out nectar, pollen, and water. We know that even if everything goes well according to our timeline that it will still take 21 days from your queen's first egg before any new bees emerge, and the colony will remain in this unbalanced state until this

transition takes place. As we add the days from the time the producer made up the package, to the day that you finally have new bees emerging, it's clear to see that you now have a lot of very old bees. In fact, old forage bees are now forced to transition back to being nurse bees to tend to the brood for the survival of the colony. It is very common at this point that the colony could decide that their new queen is either failing or inferior, and they may

Suggestions

There is a saying, "If you have bees you can also make bees," and this is true. Inserting a frame of emerging brood from another colony into a newly installed package of bees is a good way to boost colony population immediately, and mitigate the unbalanced situation. Take a few minutes to read this important article by David Tarpy on this subject: "Influence of brood pheromone on honey bee colony establishment and queen replacement." If you have existing colonies and extra bees and brood, however, you might also consider the purchase of a more "select" queen of known genetics, one of your choice, and install her into your own "nucleus." For me this is a much-preferred method.

stalled packages not making it through the first year.

Typically, a new beekeeper has little extra equipment (and drawn comb) and will need to install the package onto undrawn frames of foundation, and this new colony must start from scratch, other than the syrup you will need to provide, so that they may begin to draw out the foundation. Having a few extra frames of (clean) drawn

comb at this time to insert into your hive would greatly assist your bees to get established quicker.

To any new beekeeper, you are certainly off the hook if something might happen to your newly installed package of bees. Having installed hundreds of packages over the years, I will testify that many things can and will happen when trying to establish a colony.

Some Questions

Q. I went into my newly installed hive of bees and I can't find the queen!

A. Don't look for the queen, but look instead for eggs surrounded by pollen and nectar stores on the same frame, as a positive sign. If you have eggs, you have a queen.

Q. I can't find any more eggs or brood in my hive. What happened?



A. Supersedure is very common in newly installed package bees. Look for queen cells, especially ones that are capped, and if you have eggs, or cells, close the hive and leave them alone. Read up on how long it takes a colony to rear a new queen from a larvae to a hatched queen, to a mated queen, and finally to a lay-



ing queen. When this happens to me, I usually write the date on top of the hive and go back in *no sooner* than 30 days. Patience can be a great asset working with bees. It is also a common mistake among any beekeeper at this time to try to install another mated queen during a potential supersedure process, only to have the bees reject your \$35 queen and kill her as soon as she is released.

Risks of Ordering Package Bees

Transporting live bees over great distances in springtime is a risky proposition; and paying anyone a deposit for future receipt of bees, enabling them to pay for ex-





penses before you actually receive your bees, is a risk you will assume. Before ordering a package of bees, make sure you ask:

How long has this company been transporting and selling

package bees successfully?

Know the sellers refund policy. What happens if the packages arrive in poor shape? What if the queen is dead in her cage at time of my introduction? What is their replacement policy?

Not all package bees are created equally. A few hundred dead bees at the bottom of the cage is a normal bee die-off during transit, but having an inch of dead bees at the bottom of the cage when they arrive is **not**. Reputable package bee producers include extra weight of bees to account for normal mortality during transportation, and the supplier's responsibility should be to provide you with a healthy-looking package of live bees when they arrive.

Good luck with your bees! Bee well.

Installing Your Package: Photos and demo courtesy of Melanie Kirby







Zia Queenbees advocates for nucs over packages, but started offering packages as requests from urban areas tend to be more for packages. Zia Queenbees offers both packages and nucs and is working toward offering top bar nucs as well as Lang. Here's a link to a video on how to install a package: https://www.wevideo.com/view/2118454541







Winter Conference: Highlights and Insights

Samuel Ramsey: Varroa Anatomy—Why It Matters to Your Bees

By Steve Black, CBeeks Director and NMBKA immediate past President

This presentation was the one I was most excited to see and hear. I have attended several of Dr. Ramsey's presentations over the last few years at various virtual beekeeping conferences and it was truly an honor to get to introduce him. He is currently somewhat of an entomological "rock star," having made significant contributions to our collective understanding of the current major threat to our honey bees ...varroa mites.

Dr. Ramsey began by characterizing the relationship between the mites and honey bees as "parasitic symbiosis." He showed varroa

images that with incred-

ible detail of the mite's

body and videos of mites that demonstrated certain

behaviors. I've never seen

ages of mites, looking like

alien monsters (see these

SEM photos captured by

Dr. Ramsey). It was inter-

esting and new to me, hear-

ing that varroa mites can be

so many SEM (scanning electron microscope) im-

With this presentation we learned that varroa mites are blind and so they feel and smell using the sensors in their front legs to evaluate the environment around them. Dr. Ramsey described in detail several evolutionary adaptations of the mite that among other things, give them the ability to camouflage themselves on host honey bees in the dark of the hive. Honey bees can't see them, feel them, smell them and even if they do, they are physically hard to remove due to hold fast mechanisms built into the mite. All of which should help us be more compassionate towards our bees for the difficulty they have in dealing

with the varroa mite on their own. They need our help!

If you haven't seen Dr. Ramsey's presentation yet, it is available on our website. Despite thinking that after seeing all of the "creepy" images of mites, I would have nightmares of being attacked in my sleep ... but so far I have not. My nightmares are what



described as "fascinating" rather than just pure evil.

they have always been ... showing up to grammar school in my pajamas!



Jonathan Lundgren: We Must Heal the Soil to Save the Bees

By Kathy Grassel, newsletter editor

Farmers Unite - Government Not Invited

cientist and farmer Jon Lundgren has hung up his efforts to influence government agencies like the EPA or USDA, which he says rely heavily on biased findings of pesticide companies like Bayer Monsanto when making policy. Instead, he's gone straight to the farmers to push for change from the bottom up; i.e., from the soil up. His talk, "We Must Heal the Soil to Save the Bees," struck a chord with me, taking me back to my childhood and formative years growing up on a farm in South Dakota. My father was born in 1924 and endured the Dirty 30s as a young boy, watched plowed soil blow away and the grasshoppers consume any blade or sprout, witnessed his father breaking down weeping after discovering the milk cows all dead in the barn after consuming grasshopper poison, and hearing his mother exclaiming, "Joe, Joe ... JOE! It's the cows that are dead, not the children." My father was one of eight, all surviving those hard times. In 1947 he married, borrowed to buy 80 acres next door to his homestead, then bought a bull and two cows. The farm expanded over the years to a thousand acres and growing herds. He and my mother began to prosper only years later after the final land payment, after I'd already left home for college. All those years his "old school" farm practices matched what Dr. Lundgren has declared as crucial elements if today's regenerative cropping and livestock systems are to succeed: Little or no tilling, cover crops, insect diversity, grazing, perennial pastures, crop rotation, no pesticides.

The soils are once again degraded, but in a different way. What happened? The next generation came home from the ag colleges schooled in "modern" farming methods. My cousin, my father's hired hand and an Ag graduate of SDSU, once told me that Roundup was so safe that he could drink it with no ill effects. That was also the era of Get Big or Get Out and many small farmers went broke. Monocropping, chemical fertilizers, cattle feedlots, hogs confined in cramped pens, prophylactic antibiotic feed additives, massive herbicide and insecticide spraying, and Big Ag's lobby power in league with the very government agencies tasked with protecting farming and livestock ... the list is long about what happened to agriculture, and thus us. Meanwhile, forgotten in the progression of all this ... the bees. Bees (and all pollinating insects) are malnourished and weakened from poor foraging conditions from loss of habitat after monocropping combined with massive pesticide applications to support the monocropping, inviting disease and viruses to flourish and kill off the same pollinators providing the ecological services that feed us. This much we beekeepers know already.

Dr. Lundgren talked a lot about neonics, now the most widely used pesticide in the world—the beekeeper's nemesis. Neonics are deployed as covering on seeds, meaning roots, stems, leaves, fruit, pollen, and nectar are all contaminated. What isn't taken up by the plant wears off the seeds, accumulating in soils and waterways. Insects expire first, then it's fish, otters, and birds, and then the flora and fauna that they in turn consume. Lundgrun has found that neonics are also adversely affecting and weakening mammals such as deer, and birds such as pheasants—both with their respective hunting seasons being huge contributors to the economies of states like South Dakota, not to understate that people then eat this game.

It's going to be a long crawl back. Jon Lundgren is devoted to that way back. He works his own farm, runs livestock, keeps bees, has a research lab in a converted barn, and teaches ecologically based ag practices to farmers and ranchers across the country. Farmers can join his "1,000 Farms" initiative and be part of the solution. Find out how by checking out his <u>Blue Dasher Farm</u> website.

Results from Lundgren's collaboration with farmers have shown that yields have not gone down after farmers eschew use of neonics, nor have farmers' profits suffered because they're spending less on chemical inputs. Thus Lundgren has set out not to ban neonics, but rather to show that insecticides aren't actually needed.

If higher yields and higher profits are the result of adopting these regenerative measures, then farmers are the vanguard of agricultural reform. This is how Jon Lundgren sees it. I encourage everyone to log into your account on the website and watch or re-watch this fascinating and important talk. In saving the soil to save the bees, we could end up saving the world.

Marla Spivak: Why Care About Propolis?

By Amy Owen, <u>Desert Hives</u> LLC, outgoing NMBKA board member

Propolis: Don't make it rough, make it groovy

Propolis is shiny to the eye and can be green, red, white, yellow or gray. It is irregular on a bee's legs, unlike their nice round pollen balls. Marla Spivak increased our love, or perhaps cultivated some love, for this sticky substance called propolis during our 2022 Winter Conference. Spivak, a former New Mexico resident and beekeeper, has become a well-known researcher regarding her contributions to developing varroa hygienic bees and in discovering the benefits of propolis to a honey bee colony.

Bees must collaborate as a colony to create social immunity through behavior. This is done through their division of labor (spatial segregation), hygienic behavior, and resin collection. While Spivak has done extensive research in all of these areas, she focused her most recent talk on resin collection.

Bees can recognize plants that produce resins; resins which are highly anti-microbial. This is how many plants stay healthy. It also prevents herbivory and protects them against UV rays. Honey bees usually scrape resin off of a growing leaf. The foraging bee must then have her sisters pull the resin from her legs upon returning to the hive. The bees don't change the chemical composition of the resin, but sometimes add some wax. Chemically, the resin stays the same. Once resin in inside a hive, it is referred to as propolis.

Propolis kills off fungi, bacteria and other microbes within the nest cavity. Bees coat the inside of a tree cavity, but not the inside of our traditional beekeeping equipment. This is because the wood is planed smooth. I know a few beekeepers who have used rough lumber, or who have roughened up wood trying to encourage the bees to coat the inside of their hives in propolis. All have had the same results, no propolis envelope. Spivak and her students were able to determine why rough lumbar and roughed-up wood do not encourage the bees to create this desired propolis envelope. Bees coat only significant crevices, as they do within a tree cavity. The crevices in her study that provided good results were 7 mm apart and 7-9 mm deep—similar to those in a tree. Resin foraging is demanding and does not provide the bee with an immediate reward (like honey and pollen). Bees mainly collect resin from the genus *Populus* in Minnesota. This is the same for northern Europe. Here in New Mexico, our beloved cottonwoods are of the *Populus* genus, the *Populus deltoid*. It is likely that much of our resin/propolis comes from these trees.

Without an immediate reward, what are the rewards of propolis to a honey bee colony? Spivak's studies showed that having a propolis extract envelope significantly reduced the number of chalkbrood mummies they had. It didn't cure the disease, but it helped them reduce the disease load, thereby helping them maintain their own health. American foulbrood severity was significantly reduced with a propolis envelope (using a propolis trap).

Quantitative PCR is how entomologists measure the proteins produced as part of a bee's immune system. It is an immune related response that can be measured. Immune responses were lower in colonies with a propolis envelope. Bees in colonies with a propolis envelope also have a less variable immune response over the season. When bees have to activate their immune system, it's at a cost to them. Having a propolis envelope reduces this cost. The envelope is killing off the microbes so that the bees don't have to activate their own immune system in response.

So what happens to the bees' microbiome, where beneficial bacteria must thrive? Spivak and her colleagues sequenced all the bacteria in a bee's abdomen/gut. Each area of the gut hosts its own community of bacteria and fungi. Although bees do not eat the propolis directly, the core beneficial gut microbes are more abundant and bad ones are less abundant when bees have this propolis envelope.

Bees' mouths come into contact with many different things through feeding larva, collecting pollen and nectar, trophylaxis, etc. In another one of Spivak's ingenious studies, bees' mouth parts were removed and frozen, and then the DNA was sequenced. As expected, there is a lot more bacteria on the bees' mouths without a propolis envelope, yet the 3 core beneficial species of bacteria increased in abundance in bees with the propolis envelope.

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Propolis compounds are found in honey. Remember, bees have their mouth parts on just about everything. Beneficial phytochemicals that are found in honey come from the propolis, not the nectar that bees turn into honey through dehydration and trophylaxis. Although propolis is not ingested, it is suggested that ingesting honey may be one way that bees get the benefits of the propolis derived compounds. The honey becomes infused.

As a beekeeper who makes propolis tincture, I have avoided ingesting it, or only ingested small amounts for short periods of time because I worry about destroying beneficial bacteria in my gut. I wonder if the beneficial bacteria in our gut's microbiome can also withstand the antimicrobial effects of propolis? I'm thinking it wouldn't, because we didn't evolve alongside this substance as bees have. Marla Spivak was careful not to comment on the benefits of propolis to humans, and suggested we attend the International Propolis Research Group conference on May 4th-6th. At this conference, they will be able to discuss propolis and human medicine.

Of other interest to us beekeepers, propolis does not lower nosema, or viruses like deformed wing virus. Bees apply a small amount of propolis on the cells of brood comb. These compounds help increase the mortality of the mites by 20% and decrease their fecundity by 50%. While propolis does not significantly lower varroa levels, it is one of the tools bees have to lessen the parasite's effects.

So, are bees 'social' medicating? Collecting more propolis when they are sick? Bees significantly increased their number of resin foragers when they were challenged with chalkbrood (fungal). They only increased it slightly when challenged with American foulbrood (bacterial). Spivak admitted that they don't know why a fungal infection increased the number of propolis foragers while the bacterial infection did not.

Propolis provides benefits to bee's immune systems, promotes core microbiome species, and helps reduce a bee's disease load. It also slightly aids them in their fight against varroa.

There are several things we beekeepers can do to aid in our colonies' health. Seven mm grooves, 7-9 mm deep, were very rapidly filled in with propolis. These grooves don't interfere with bee space like propolis traps would. Propolis increases the population of a colony slightly, and it does not interfere with honey production. The more propolis the bees collect, the lower their immune response is, which is less taxing on the bees. Let's make some grooves!

Spivak does not advise making a propolis tincture to spray onto the inside of hives. This reduces some of the propolis' beneficial properties. Propolis can be toxic. How much is too much? This is yet to be determined, and Spivak advises that we do not spray propolis directly onto combs.

"Let the bees do it themselves." Spivak reiterated this throughout her talk. Bees know best. As beekeepers, we can enable them to do what they do best by cutting grooves into our hive equipment.

Observation:

They are not finding neonics in propolis, but they are finding fungicides. Exposing the bees to the fungicides in this propolis gave the bees no ill effects. Spivak believes that propolis encapsulates these chemicals.

After speaking at the NM Pest Management Conference in January, I wonder if we beekeepers could come to an agreement with pest applications to only use neonicotinoids on trees that are non-flowering (this would allow for application on the big resin producer, cottonwoods). Applicators use this pesticide to protect trees from wood boring insects. If using a drench, they could then cover the wet ground at the base of a tree with a dry mulch to protect pollinators from contaminated water and mud. As far as propolis is concerned, no neonicotinoid detection is great news; however, most of us know this is not the case for pollen and nectar-and we must always look out for our soil and water health. This is one of many ways we can work with (not against) applicators to improve pollinator health. In general, applicators and the general public want to do a better job of protecting pollinators.

Megan Mahoney: Successful Queen Rearing—a Technical Guide

By Melanie Kirby, Zia Queenbees, NMBKA board of directors

here's so much to say about the jam-packed and informative presentation by born-and-raised New Mexican professional beekeeper Megan Mahoney. I won't disclose it all as you'll just have to watch the recording for yourself. First, I'll say that by the end of this review, may you become as die-hard a fan as I am of this hard-working, dedicated, and graceful apiculturist. I first met Megan back in 2009 and over the years she has become a close "comrade-in-arms" as we have been able to talk shop about bee breeding, aspirations, collaborations, and research ideas. This all being said, when you are familiar with someone, it can lead to a subjective review. However, it is one that is also inclusive of the history of the person, acknowledgement of their efforts to gain a better understanding in their chosen discipline, and the seriousness of their application. In short, following Megan's experiences is inspiring. Especially remembering how she started as a backyard top-bar beekeeper in the South Valley of 'Burgue.

Megan has put in close to 20 years working for several beekeeping operations and organizations across the country which has led her to this moment, where she has been able to synthesize a distinct "closed" bee breeding program within a larger migratory beekeeping family outfit. What is a "closed" bee breeding system, you ask? And how does it differ from an "open" one? The answers are creatively described by Megan in her witty presentation along with explaining "QUEEN RIGHT" and "QUEEN LESS" cell builders through pictorial slides. She also shared her inspirations for developing her breeding program and insights working in various roles of the American apicultural industry. Megan invites us to view how instrumental insemination can be used as a tool to speed up time for selection and for sharing quality stock lines. Overall, I give her presentation a thumbs up and I plan to watch it again as there was so much good info to absorb! Check out Mahoney Bees & Queens!



Only the best drones



Lots of nurse bees





Julia Mahood: "Tips 'n' Tricks"

By Anita Feil, Las Cruces, NMBKA board of directors

ulia Mahood is a Georgian bee hobbyist, master beekeeper, and graphic artist. She gave an informative "Tips 'n' Tricks" presentation, available to view on the New Mexico Beekeepers Association website. Julia has been able to marry beekeeping with her graphic art background, with great results. Of the 25 topics covered in her presentation, I chose six that are useful for both beginner and advanced beekeepers.

Smoker

Using a cork to safely and quickly snuff out the smoker is an outstanding idea. Whittle down a cork end to fit tightly into the spout, place an eye-screw on the big end of the cork, and connect a thin wire to the eye-screw and smoker. Your cork will be with you at all times. Bonus: Take a metal pail along for placing the hot smoker in to prevent damage to your vehicle.







Smoker Fuel

Selecting a fuel type is always a big conversation among beekeepers. We each have our personal preferences but are always open to another great idea. Julia finds cotton cut-offs her choice of smoker fuel. She also suggests yarn or cotton circles as a quick way to get the smoker started. Cotton circles are 8" circles made from knit terry textile. Pictured is cotton yarn that has been cut off the spools. Cut-offs are leftovers after cutting the 8" circles. You can buy this stuff at <u>beesmokerfuel.com</u>

Smoker Efficiency and Safety

Lighting the smoker can at times be the most difficult and frustrating aspect of hive inspection. The smoker is the number one tool. Using a handheld torch should make the task easier and faster. Fill up your smoker with your selected fuel and light with the handheld torch. The torch will light the smoker from the outside. That's hot! For safety, have a small kitchen extinguisher on hand to put out an accidental fire. We have all heard on the news about a fire started by a beekeeper. Let's not end up on the news.





Exringuish a fire



Queen clip

Inspecting the hive starts with wanting to see the Queen. Using a queen clip is a safe way to catch the Queen and inspect her, while still allowing her attendants access. Tie a ribbon to the queen clip to help you locate her after you are done working the hive. And remember, always place the Queen in shady spot.

Put graphics above hive entrances

V 5.

N4.

BLUE-VIOLET

PATTERNS

ORANGE-YELLOWS





This illustration speaks for itself.





Decorating Your Hives

Decorating my hives has always been a part of my beekeeping. My hive is here on the left. Learning about decorating with particular colors and shapes has added more ideas to my bee hive decorating.



Cleaning Your Gloves

Keeping your gloves clean of honey and debris is important for you and the health of your hives. Wash your gloves with a gentle soap and rinse thoroughly. Take olive oil and rub it into the leather to keep them clean and supple. Hang your gloves up to dry for the next trip to see the girls.

I suggest you take the time to watch Julia Manhood's "Tips 'n' Tricks" video located on the NMBKA website. As a member of NMBKA you can watch for free. If you are not a member, joining up (at <u>https://</u><u>nmbeekeepers.org/</u>) will make the video available.

Here's a list of additional "tips 'n' tricks" presented by Julia for your beekeeping work.

Hive drapes Frame grip Frame perch Marking frame positions Finding your hive tool Swarm rest stop Pole catcher - design 1 Pole catcher - design 2 Queen excluder Put a cork in it! Adding blue food color to your sugar syrup Hive lifter Use all medium boxes Condiment squirt bottle for SHB trap Salt for SHB control Gloves Throw away old wax Solar wax melter Checker boarding Make a resource nuc Honey freezer Practicing marking Queens Super painting Oil

Quentin Geant: Rooftop Beekeeping in an Urban Environment

By Allison Moore, landscape architect, outgoing NMBKA board member

uentin Geant is a third generation beekeeper originally from France and now residing in Denver, Colorado. He started out building hives with his father and then eventually traveled around the world learning different beekeeping techniques from numerous beekeepers before settling in California and then Colorado.

He now works for <u>Alveole</u>, an urban beekeeping company whose goals include: Helping people to fall in love with bees, build ecological awareness, and in time more sustainable cities and food systems. Since 2013 they have introduced over 100,000 people to bees (and nature) calling it social beekeeping. They set up and maintain hives on rooftops all over urban areas covering two continents, seven countries and 38 cites with more than 100 beekeepers. They want to make the bees and hives as accessible as possible, so they don't wear veils and suits to encourage people to interact with the overall process as much as possible. The goal is to connect people to nature with honey harvesting as a secondary goal.

As an urban beekeeper myself, I greatly appreciated the overall mission of the company. While some of the challenges they encounter (height, limited accessibility, and extreme weather) are different then the challenges I encounter on my ground bound hives, their overall message really resonated with me.

I grew up in a very rural small town in southwest Virginia with horses, goats, chickens, as well as cats, dogs, birds and the occasional rabbit, ferret and pig. The forest was my back yard and that is where I felt happiest. I always thought I would end up in the country living as close to nature as possible. However, life happens and due to my current job, I now live in a new (old) house in the middle of Albuquerque±—the biggest city in New Mexico. Sometimes (usually after driving in rush hour traffic) I find myself quoting David Byrne with the Talking Heads asking, "How did I get here?" from the song "Once in a Lifetime." <u>https://www.youtube.com/</u> watch?v=5IsSpAOD6K8

I have come to realize that my urban garden and urban beehives are just as important and crucial to combatting climate change, increasing social awareness and contributing to our (humans, plants and animals) survival as much as the rural gardens, farms and apiaries found in the countryside of New Mexico or Virginia. More and more of us humans are moving to urban areas—sometimes by choice but often times not. Now more than ever we need to green our cities and suburbs, plant native and drought adapted plants in every conceivable corner, provide food and habitat for animals that are displaced by humans, and grow our own food. Turning actions such as these into a social event feels like an excellent way to educate, inform and get to know our neighbors. Since Covid, socializing seems like an ancient art form that needs revitalizing!

And yes, there is pollution in the form of car/factory emissions, groundwater contamination, and insecticides and herbicides, so it was fascinating to hear Quentin say that such pollutants have not affected the quality or taste of the honey, let alone the health of the hives.

That is a sign of hope and one that I will hold onto to moving forward with my own social experiment.



The Conference Auction: Something for Everyone

51 prizes in total went not just to Albuquerque and Santa Fe keepers, but to Colorado and as far away as Kansas. Winners went above and beyond in their generous support of NMBKA. Many thanks to our donors: Amy Owen, Allison Moore, Kathy Grassel, Kate Whealen, Ed Costanza, Carol Horwitz, TJ Carr, Anita Amstutz, Lynette Ewer, Ryan Miller, Jason Fink, Cheryl Bradford, Steve Black, and several corporate donors. Corporate logos in the middle.



Ekaterina Davydenko drove from Los Alamos for her Pro Health win



Cheryl Bradford all set for the season with these four-jar feeders



Steve McWilliams with his Blue Sky gift certificate



Rebecca Rojas scored the bee blanket--the top seller of the auction



Rebecca Rojas recruits help from Steve Black for her cache of goodies





Suzanne Norman from Cuba got a great deal on this deluxe hive kit



Michael Lente holds queen excluders and a sack of other goodies



Philip and Jolene Day score the top bar nuc



Thor Spangler has a couple surprises when his wife gets home

Siberian Elm—A Tree Only a Beekeeper Could Love?

By Allison Moore, Landscape Architect and outgoing NMBKA board member



pring is here, and here in Albuquerque people are sneezing while the honeybees are collecting a light grey almost white pollen so that can only mean one thing ... the Siberian Elm trees are popping!

Everyone is familiar with Siberian Elm trees (*Ulmus pumila*) either

by sight or name. The tree can be found all over New Mexico especially in the urban environments where they manage to grow with limited water along fence lines, sidewalks, acequias, parking lots and forgotten corners. They are not the grand iconic American Elm trees (*Ulmus*)

americana) of the past that were native to the country and lined countless streets and provided shade and beauty to parks and riparian areas. The American Elm tree has mostly died out due to Dutch Elm disease and very few still survive today.

The Siberian Elm tree is originally from Northern China and Eastern

Siberia and was first brought to the United States during the Dust Bowl era to be used as a possible windbreak due to its toughness and ability to survive in poor growing conditions. It was introduced in the 1930s specifically to New Mexico by Clyde Tingley during his time as governor of New Mexico and mayor of Albuquerque. He promoted the planting of thousands of trees all across the state through funding from the New Deal; most were Siberian Elms. He even established tree nurseries in Albuquerque that raised and then gave away the tree seedlings. Why the Siberian Elm? It was inexpensive, easy to propagate,



grew very fast, was drought tolerant and provided a lot of shade. It was the tree of choice for most New Mexican towns from 1930 to 1950 and was often incorrectly called Chinese Elm. Even today you can still hear people ask is it Siberian or Chinese?

Note: There are Chinese Elm trees (*Ulmus parvifolia*), many of which are beautiful ornamental shade trees that are not as aggressive and prolific and also perhaps not as tough.

Lovely shade and tough as nails ... what's not to love about the Siberian Elm tree? Well, pollen for starters. Siberian Elm trees are a wind-pollinated species and produce a massive amount of pollen to ensure their survival.



This triggers allergies even in the most healthy of individuals. Then there are the seeds. Also called Samsara these small green papery discs are released like confetti and gather in every nook and cranny where they germinate easily even in the most inhospitable conditions. They are so prolific that they are often referred to as "Tingley snow." If not removed

soon after germination what was once a small seedling can turn into a mature tree with extensive roots in a short amount of time.

As a long time landscaper, I dreaded the release of the pollen since it usually signaled that the seeds were next to arrive and then millions of seedlings that needed to be plucked by hand. Now however, as a beekeeper I welcome the sight of the fat buds on the branches releasing their protein rich pollen for all the bees and other pollinators and appreciate the perfect timing and availability of this food source when most plants are still dormant. I have also discovered a new use for the Samsara as a tasty addition to salads or topping to main dishes like pasta. Eaten raw when light green and picked just as the trees are leafing out, they impart a light spring-like flavor.

The Siberian Elm can be a hard tree to love. Many of the attributes that were lauded in the last century have also become its Achilles heel. The ability to grow fast and aggressively has translated into allergic reactions, weak branching that sheds frequently, and root systems that seek out drain pipes. On the other hand, this species provides a reliable source of shade, food and forage for both humans and wildlife. Perhaps with the increasing change in our climate, this tough tree will once again fall into favor and be appreciated as an introduced and adapted species.

Sources:

"The Magnificent Elm Tree," Joran Viers, City Forester, Parks and Recreation Department, City of Albuquerque website <u>The Magnificant Elm Tree</u>

"A Brief History of Urban Trees in New Mexico," completed by Karen Von Citters, Historic Preservation, LLC, in cooperation with Groundwork Studio and prepared for State of New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division. <u>A Brief History of Urban Trees</u> "Elm Samsaras are edible, gourmet," Wildfood Girl

Let us know what's buzzing with you!

Please continue to share your stories and photos with us. We appreciate your articles and updates on all your activities and beekeeping adventures. If you would be interested in being a regular contributor with a regular column such as Allison's plant column here, let's talk! Thanks for taking the time to contribute to *Bee Friendly!* No doing it without you!

> Your editors, Kathy Grassel Jade McLellan



Gardening in the Desert Southwest

By TJ Carr, TBH beekeeper, gardener, CBeeks instructor, retired engineer

have devised a method of productive gardening to deal with the vagaries of weather and soil conditions in the Desert Southwest (DSW).

Start in the previous fall

This method involves starting the next seasonal garden with the onset of the first killing frost in the fall. At frost the old garden is pulled up, all of the nightshade plants (tomato, potato, peppers, and egg plant) are removed to a landfill and all other plants are ground up in a chipper/shredder for compost. The garden soil is prepared with four inches of finished compost and four inches

of chicken (or rabbit) manure. This material is tilled in and the garden soil is mulched with about 10 inches of ground leaf material. The garden is left in this manner for use after last frost in the spring. By fertilizing and mulching during say November/ December, the nutrients added to the soil will disperse their nitrogen into the soil such that it is available for plants in the spring (and not burn the soil), moisture from winter rains and

snow will filter through the mulch and be stored for use in the spring, and the winter winds will not carry the winter moisture away. Of course a bit of the leaf mulch will decay over the winter and add to the organic content of the soil.

At planting time leaf mulch will be pulled back such that seeds and starts can be planted in plastic bottom-less one-gallon buckets over soaker hose. The plastic buckets have slots carved in the sides to allow about half of the bucket to be buried under the soil and soaker hose. This plastic bucket trick keeps the snail and roly-poly bugs away from the tender first shoots. Snails and roly-poly bugs don't seem to be able to climb up the plastic side exposed above the soil.

There are two tasks that all gardeners detest as boring and time-consuming: pulling weeds and watering. The mulch will provide mostly weed-free gardening; the soaker hose with a manifold system for zone watering will make a simple task of an otherwise odious chore. Some things that will be needed:

- Fence around the garden
- Tools
- Watering system
- Source of water
- Mulch
- Manure
- Compost
- Cages for tomatoes
- Schedule for when to plant certain crops

Fence around the garden



In the DSW, a fence that will block wind and keep certain critters out is essential. A fence eight feet high is not out of the question, of course a fence of this height is expensive and certain consideration must be made for wind load. Without such a fence, wind will cause significant damage to the plants as well as cause moisture loss from transpiration due to the stipules on the bottoms of the leaves.

If the fence must keep critters out, special consideration must be made for the anticipated critters. If rabbits will be a factor, the fence must be built below the soil, and the fencing material (poultry mesh) must be placed horizontally below the soil about six inches deep, and must extend two feet outside the margins of the garden fence. No matter how deep one buries the fence, rabbits will dig deeper but they can never figure out when the fencing material is horizontal.

Squirrels are a special consideration as they can climb any fence. If squirrels are to be considered, the top of the garden must be covered with (as a minimum) small cell poultry mesh. Many places in the DSW, gardens must be protected from birds with the overhead mesh.

If prairie dogs are a factor and the fence material is poultry mesh, a layer of hardware cloth must be added to the fence at ground level to keep prairie dogs out.

Moles and gophers require special consideration and are probably best managed with traps.

Any of the above-mentioned critters can and will completely harvest the most carefully prepared garden in one evening.

Needless to say, it is important to keep dogs and uninvited guests out of the garden.

Any garden fence must have a gate for personnel and a gate, say 10 feet wide, for truck and tractor access (more on this topic elsewhere).

Tools

Certain hand tools (shovels, rakes, hoes, wheelbarrows et al.) will be needed and will be mentioned only in passing. The real need for tooling comes in the form of machinery. These things can be rented or purchased, a chipper/shredder of say 20 horsepower, a rear tine tiller, say about 10 horsepower, a compact utility tractor around 30 horsepower with both a tiller attachment and a

14-inch plow, and a one-ton dump truck. The truck will be utilized to move leaves and other material to the shredder for compost and mulch service, and will be the means to move useful amounts of chicken manure from an egg producer to the proposed garden. The manure will be needed for both the compost operation and for direct tilling in the garden soil. A dump truck is far better than shoveling the material out of say a flatbed or pickup. The tractor will be required to prepare the soil the first time; after the first year the rear tine tiller may be satisfactory for annual service.

Watering System

Most gardeners water from a garden hose, and hate the chore, therefore the garden either does not get watered or gets watered improperly. A simple system utilizing soaker hose placed below the mulch and adjacent to the roots of the plant arranged with a manifold to allow selection of zones makes the task easy and simple. Four-way valves can be purchased at Lowe's and they can be connected by a "wye" adapter to service eight zones. The manifold can be placed at a convenient point in the garden and garden hose can be joined to the soaker hose with common hardware and hose clamps. No waste of water and fairly easy to set up. Sufficient water pressure must be available

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from the source to allow the soaker hose to work, and the lengths of the soaker runs must be monitored to be certain that water is delivered to the end of the run.

Mulch

The best all-around mulch is made by grinding leaves from trees in the fall. It is possible to add ground up tree trimmings and other organic



material for the mulch that will go into the compost heap; the mulch that will go directly on the garden soil should be leaves only. Excess woody material placed on the soil will ultimately be in the soil and nitrogen robbing can create an undesired effect.

Many gardeners use straw or rotten alfalfa for mulch. The straw is carbonaceous and can contribute to nitrogen



robbing; rotten alfalfa is filled with weed seed which creates a new set of problems.

Cardboard makes good mulch and can be tilled directly into the soil at the end of the season. Cardboard must have the ends weighted down adequately to avoid loss to the wind and plant damage. Works very well with the soaker hose system. The cardboard also can be run through the chipper/shredder for the compost heap.

Manure

The typical DSW soils, especially locally, are mostly decomposed granite and have little or no organic content. That said, a gardener must add organic material to the soil to ensure a satisfactory garden. Best move is to use compost and manure. The manures that are locally available are cow and horse. Neither is a good fit for DSW soil as they are very salty and filled with undigested weed seed. Simply avoid these materials. Find an egg farm and haul manure away for them. They will usually provide it free, and may be willing to load it for free to get rid of it. Do not plan on having the chicken manure exposed to the air as it will create flies and an unpleasant odor. Either put the manure in 20-gallon plastic tubs with tight lids or place the material directly in the compost heap (covered) or place it on the garden soil and till it in straight away. If

the garden is to be planted immediately after the chicken manure is tilled in, probably best to use no more than an inch of chicken manure for a first garden. If the manure can be tilled in and allowed to decompose in the soil over the winter then four inches should work out fine.

Compost

Compost is sometimes confused with mulch. The purpose of mulch (cardboard, newspapers, shredded Xmas trees, other types of vegetable waste, straw, sawdust) is to keep the moisture in the soil by keeping air, wind and sun from evaporating the water from soil. Mulch should be on top of soil and not turned in until it decomposes, say by next garden season. Compost must be turned into the soil, and should not be left exposed to air, wind, or sun.

Compost reduces waste material into a super natural fertilizer due to microbial action. Items for the compost pile include dry brown plant matter such as leaves, branches, and stalks; green matter such as grass, green plant waste from the garden (or nature); kitchen waste to include paper and cardboard; and animal manure, preferably rabbit or chicken in the Desert Southwest. These items, with the addition of water, ventilation for air, and native microbes from the soil will form a brown crumbly matter that is highly nitrogen-charged and ready for garden service when fully mature. In practice the microbes from the soil will consume the mixed material waste material, raise the temperature of the heap to around 135 degrees F after several turnings. Once the finished

compost is available, it must be incorporated within the garden soil because the nitrogen is in gaseous form and is lost to the atmosphere without cover. Once in the soil the compost continues the process with other nutrients in the soil. During the finishing process the heap should be kept covered at all times with a plastic tarp or other suitable material.

Cages for tomatoes and other garden vegetables

The welded wire cages that one finds on offer in a garden supply will do for egg plant and bell peppers, but will not survive the tomato plants that this system of gardening will generate. There is a product sold at stores like Lowe's called re-mesh or sometimes spelled out as five-by-five. This is the welded steel wire one sees placed in flat slab concrete. Purchase this material and make the cages for tomatoes by cutting six-foot sections, joining the open ends with a hook fashioned with pliers and place the cage over the tomato plant when it is small, support the cage in place with two eight-foot long 2x2 redwood stakes driven into the soil. Use bailing wire to secure the cage to the stakes.

It is a good idea to plant two plants in each cage, usually of two different varieties, with the hope that one of the two plants will still be productive at the end of the season.

Tomatoes must not be planted in the same spot each year. The garden should be divided into seven areas and the tomatoes rotated thru the area on a seven-year cycle. There are two pathogens (Verticillium and Fusarian) that

live in the roots of tomato plants and these fungi will ruin certain crops placed after tomatoes. It is better to plant a grass (corn) after tomatoes. Generally hybrid tomatoes are resistant to these diseases



In February 40 degrees. Left to Right: 1) Xmas tree grindings, no heat. 2) Active compost heap, no snow, 110 degree heat. 3) Finished compost ready for use in the garden. 4) Ground fall leaves for mulch.

but so-called heirloom tomatoes are not. Peas, okra, and other nightshade plants cannot follow tomatoes successfully as they will succumb to the diseases exactly at harvest time and all of the fruit will be ruined. Do not place nightshade fruit in the compost heap; rather send it to the landfill.

There is a plant that grows wild in the late winter and early spring called wild mustard. This plant is a host for the Beet Leaf Side Hopper. This critter migrates from the wild mustard to tomato and chili plants after the warm weather sets in and causes a disease (a virus carried in the mandibles) called curly top. If a plant is diagnosed with curly top, place it in a sealed bag and send it to the landfill. Keep the wild mustard pulled in the area of your garden.

When to plant certain crops

Tomatoes and most other nightshade family plants can go in after the last frost (usually mid-April) and after the soil has warmed up a bit. The plants will not do anything until the soil is 65 degrees F at night. Corn can go in at this time as well. Vining plants such as cucumbers, squash, and beans must be planted after mid-June to avoid certain insect predators. Squash bugs will decimate squash, cucumbers, pumpkins, and melons if planted early in the season. Beans will fall victim to the bean beetle if planted early. Cucumbers and corn should be planted in batches every two weeks so that there is a constant flow of food until first frost. Corn should be planted in groups of four rows to allow for proper pollination. Corn and tomatoes are wind pollinated. Most other garden crops depend on bees for pollination.

Good soil will make a good gardener of anyone. Take the time to get the soil in good order and follow the other guidelines and a good garden will follow.





Forager's Friend: A Tale of Two Honey Hunters

Birds and humans collaborate to locate and share products of the hive

By Jade McLellan, biologist, NMBKA board member

LIQUID GOLD

Honey is prized worldwide as both food and medicine, and perhaps nowhere is this more true than in the tropics. In places like sub-Saharan Africa, nutritionally-dense foods can be hard to come by as their availability is highly seasonal. For subsistence foragers like the Boran people of Kenya, the Hadza of Tanzania, and Mozambique's Yao tribes, up to 95% of their diets are still acquired without the aid of modern technologies, and honey constitutes up to 15% of their annual calories consumed. Traditionally, men forage for honey in traveling camps, using ropes, smoke, and axes as they climb trees to reach the hives of Apis mellifera capensis, the Cape honey bee, and Apis mellifera scutellata, the East African lowland honey bee (collectively known as "awawa" in Hadza). Not only are hives difficult to find due to the bees' preference for nesting in tall baobab trees, taking an average of 8.9 hours per hive to locate, but honey hunting is a major cause of injuries and deaths to foragers every year. Despite its high cost, honey is an invaluable and favorite food, and during the wet season up to 20% of the Hadza diet, by weight, is honey.

$\ensuremath{\mathsf{ENTER}}\xspace$... the HONEYGUIDE

The Greater Honeyguide (Indicator indicator) is one of 17 species of "honeyguide" birds native to Africa and Asia. Related to woodpeckers, they average just 8 inches long and weigh less than 2 ounces, and live up to 12 years in the wild. Their diet primarily consists of waxworms and bee eggs, larvae, and pupae, and it is one of few birds that can digest wax. Accessing the contents of a bee hive can be dangerous for a small bird, but luckily the Honeyguide doesn't have to work alone.

Wild Honeyguides will <u>first find a bee-</u><u>hive</u>, able to spot them while flying among the treetops. Then, the Honeyguide will search for fellow hive-seekers by producing a <u>special call</u>, listening in turn for a

mutual call made by <u>human foragers</u> (in this recording, a Yao tribesman). After man and bird have found each other, the Honeyguide leads the foragers to the beehive, stopping periodically and repeating its call to ensure it is being followed. The odds of finding a hive with the assistance of a Honeyguide increases <u>by a staggering 560%</u>, and reduces the time spent to just over 3 hours. Once reached, it's a simple matter for the Honeyguide to wait for the beehive to be cracked open and to receive its share of beeswax (and the contents therein).



Reciprocal communication is critical to these expeditions: the chances of a honey hunt being successfully initiated *doubles* when humans return the Honeyguide's calls, and the success of the hunt itself increases from 28% to 75% when both parties use these signals. It is estimated that 8-10% of the Hadza's diet is acquired directly as a result of these collaborations.

COEVOLUTION IN ACTION

This call-and-answer system, a form of mutualistic symbiosis, is "the only known example of targeted two-way signals between people and a free-living species." No other wild animal is known to have a method of communication specific for interacting with humans *in addition* to the existence of a human call for the same purposes. These calls are not used by either party for any other interactions, and the calls by both species are passed on from generation to generation; it's believed that Honeyguide birds learn these calls at around 3-5 years of age by watching older birds, while human calls are unique to their regions and tribes. Based on the specificity and complexity of these signals, as well as evidence from rock art dating to the Paleolithic, it is believed that this behavior may have begun emerging with

Homo erectus as early as 1.9 million years ago. Because increased honey consumption is believed to have <u>contributed to</u> <u>the development of the modern Hominid</u> <u>brain</u>, this relationship may have been a critical component in the evolution of modern man.

A PERFECT PAIRING?

Although the Honeyguide does not directly compete with foragers for honey, some think feeding the Honeyguide "spoils" it, while others think leaving the bird hungry increases the chance of future calls - the wax may be taken for human use or buried in order to "encourage" the birds to initiate hunts more frequently.

However, many believe tricking the Honeyguide is bad luck, and that denying the bird its rightful payment will result in being led, instead of a beehive, to a lion. Sadly, increasing deforestation and the rising popularity of processed foods means that these relationships are becoming less frequent, as both birds and bees lose habitat and people rely less on foraging.

Despite this, there is no denying the incredible nature of this sweet relationship, and perhaps we all have thanks to give to the humble Honeyguide.

Bees in the Attic: A Problem? No. It's the Plan!

By Christa Coggins, NMBKA board member



began top-bar beekeeping in Santa Fe about 15 years ago. My hives were attacked on three separate occasions by bears (we live up by Atalaya backed up against the Santa Fe National Forest). I finally gave up on Santa Fe and installed my hives inside the attic of an old adobe structure on a property we own in the Coyote Creek valley in Mora, NM. At first I was afraid they'd be too hot in there under the metal roof in the summer, but it turned out there's a nice breeze through the attic thanks to two open windows on either end of the space. My other concern was about rodents getting into the hives (there are mice and pack rats inside the building). To date, no rodent has ever gotten in. We've had our ups and down over the years but generally the bees do quite well as the pastures are full of a wide variety of wildflowers from April through late September.











PCV pipe connects hive to the outdoors for bees' flights



Boardman Feeder Improved for Triple Function

By TJ Carr, TBH beekeeper, gardener, CBeeks instructor, retired engineer

he entrance feeder (Boardman feeder) has been a long time valuable tool in the beekeepers tool box. The feeder is simple to operate, provides visual feed status, is easy to clean and is versatile. An improvement to this item has been designed to provide foundational value to this device.

The update to the feeder:

• Permanently attached to the front board and landing board. Easy one hand removal/installation for the feed bottle.



• Dual (left and right sides) openings for bees' egress and ingress. Easy for guard bees to filter out yellow jackets and robber bees.

• Feeder will stay in place for each season: with the Mason jar for sugar syrup or water, with the jar and lid removed during nectar flow, or with the perforated lid left in place to prevent yellow jackets and fugitive robbers.

The entrance feeder is a strong plastic item that can be placed in the entrance to the hive. The updated version closes the entrance such that the resident bees must utilize the 3/8" holes drilled in the side of the feeder body. By drilling two holes (see nearby image) and screwing two screws in the bottom of the feeder body, the front closure board becomes permanently attached to the plastic feeder allowing simple and safe removal of the feed jar with one hand.

The entrance board is 1"x2" red oak from Lowe's. Due to the clamping force available from the screws, the oak will handle the stress. Pine can be used by exercising great care not to over-tighten the 1 3/8" hold-down screws. The strong plastic feeder is difficult to drill with conventional drills. Use brad-point drill bits for good results.

Jason Fink 505-238-8111 can provide the oak woodwork. This link to the website provides the full page layout of the schematic at left.

Boardman feeder robber bee yellow jacket trap



#4 Side view showing 3/8" hole

#6 Feed jar installed

The Humble Boardman: It's a Feeder, Entrance/Exit, and Robber Deterrent

For those using Boardman feeders in either Top Bar or Langstroth hives, there is an easy and inexpensive method for providing egress/ingress for your home bees, at the same time discouraging robbers.



The inspiration for the modified Boardman feeder comes from the bees themselves. Viewed from inside a TBH, see how the bees have propolized the landing board to 3/8" holes for their entry and exit.



The skin-tight fit of the Boardman feeder into the TBH ensures that robbers cannot find another way into your hive.



The Mason jar in place. Note the screen stored behind the green entrance board for future use.





In nature and in managed hives, bees often reduce the entrance to two openings of 3/8". The bees do this in order to protect the resources within the hive. With this trap the resident bees quickly adapt to the modified fixture. The 3/8" holes on either side of the Boardman mimic what the bees have devised. These two 3/8" holes allow for egrees/ingress for the hive bees, and also make defending the hive very easy. Should a robber bee or yellow jacket approach the openings, the resident guard bees attack or chase the intruders away. Lots of fun to watch.

Report a Swarm

We are providing a list of our beekeepers who are available for collecting bee swarms in different areas of New Mexico. Give a beekeeper a call as soon as possible! What is a swarm? A swarm is formed when a queen bee leaves the original colony with a large group of worker bees, usually in the spring and early summer, but can occur through fall. The bees can stay in the cluster for a few minutes to a few days, so call a beekeeper quickly. To be listed, email swarm.list@nmbka.org

Albuquerque Area

Albuquerque Beekeepers (ABQ Beeks) Website: https://abqbeeks.ning.com Facebook: https://www.facebook.com/ groups/1894495293914135

Alamogordo

Sacramento Mountains Beekeepers Facebook Page: https://www.facebook. com/groups/483236118374096/ Point of Contact: Rob Sheplar, (575) 687-2343, Email: rob@theriver.com Point of Contact: Jennifer Clark (575) 937-0360 Point of Contact: Norm Bloom (575) 491-0456 Email: blue1057@1791.com

Artesia Area

Pecos Valley Beekeepers Association Point of Contact: Andrew Davidson (817) 983-1409 Email: davidson66@ gmail.com

Belen/Valencia County Area

Raymond Espinosa (505) 861-1693 Email: antiguasdelnorte@att.net

Bosque Farms Area Ken Hays (505) 869-2369

Carlsbad Area Efrain Nieto (575) 302-0737

Clovis Area

High Plains Beekeepers Facebook Page: https://www.facebook. com/groups/1670238479881226/ Point of Contact: Paul Hopkins (575) 799-9642. Email: ephopkins@ plateautel.net

Eastern New Mexico Beekeepers Facebook Page: https://www.facebook. com/groups/2004904406202211/ Point of Contact: Marcus Petroski (575) 749-8551

Cotton City/Hildago County Area Southwest NM Beekeepers Facebook Page: https://www.facebook. com/groups/2299960260060163/ Point of Contact: Kyle Josefy (575) 496-1037

El Paso Area Paseo Del Norte Beekeepers Association Website: https://pdnbeekeepers.org/ reportaswarm/ Points of Contact: Josh Meier (830) 357-8207 Point of Contact: Michael Hallberg (915) 407-3196

Española Area

Sangre de Cristo Beekeepers Website: https://sdcbeeks.org/reportswarm/ Point of Contact: Kate Whealan Email: katewhealen@earthlink.net

Farmington Area

San Juan Beekeepers Facebook page: https://www.facebook. com/sjcbeekeepers/ Jim Marquis (505) 861-2360

Hobbs and Lovington Area

Kirk Gilbert (575) 318-9387

Las Cruces Area Paseo Del Norte Beekeepers Association Website: https://pdnbeekeepers.org/ reportaswarm/ Point of Contact: Josh Meier (830) 357-8207 Point of Contact: Michael Hallberg (915) 407-3196

Mesilla Valley Top Bar Beekeepers

Facebook: https://www.facebook.com/ groups/946568402534332 Point of Contact: Anita Feil Email: anitalfeil@gmail.com

Red Rock/Grants County Red Rock Honey Co, Point of Contact: Lynn Whatley (505) 269-8199

Roswell Area

Pecos Valley Beekeepers Association Point of Contact: Hugo Hernandez (505) 410-1781 Email: hherna01@gmail.com Kevin Thatcher (575) 973-7422

Ruidoso Area

Sacramento Mountains Beekeepers Facebook Page: https://www.facebook. com/groups/483236118374096/ Point of Contact: Rob Sheplar, (575) 687-2343 Email: rob@theriver.com Point of Contact: Jennifer Clark (575) 937-0360 Point of Contact: Norm Bloom 575-491-0456 Email: blue1057@1791.com

Santa Fe Area

Sangre de Cristo Beekeepers Website: https://sdcbeeks.org/reportswarm/ Point of Contact: Kata Wheelen Emeil

Point of Contact: Kate Whealan Email:

katewhealen@earthlink.net Point of Contact: Christa Coggins (505) 603-0530 Email: <u>christa.coggins@</u> <u>outlook.com</u>

Santa Teresa Area

Paseo Del Norte Beekeepers Association Website: https://pdnbeekeepers.org/ reportaswarm/ Point of Contact: Josh Meier (830) 357-8207 Point of Contact: Michael Hallberg (915) 407-3196

Silver City/Grant County Area Grant County Beekeepers Website: https://www. grantcountynmbeekeepers.org/beeremoval

Truth or Consequences Area Paseo Del Norte Beekeepers Association Website: https://pdnbeekeepers.org/ reportaswarm/ Point of Contact: Josh Meier (830) 357-8207 Point of Contact: Michael Hallberg (915) 407-3196

Request for Beekeepers

The NMBKA received the following message from Olivia Wischmeyer of Vida Verde Farms. Olivia and the manager of Vida Verde, Seth Matlick, are seeking to partner with beekeepers who need land to keep hives.

My name is Olivia Wischmeyer and I will be working at Vida Verde Farms in North Valley Albuquerque in January. Seth, the manager of Vida Verde, and I are hoping to partner with some beekeepers who may need land to keep hives. We have several acres and grow lots of organic veggies and flowers. We have had others keep bees on the property in years past, but they have moved out of state. This coming summer I would love to ensure that we have bees around and that the available land is able to be in the hands of those who need land to keep hives. I wanted to reach out to you in hopes of getting some pointers with whom to find beekeepers to partner. Similarly, I wanted see if you know of anyone in search of land. Thank you so much for your time and the work you do! I grew up with my mom keeping bees in the backyard and having the best honey every summer. I am a lover of bees and cannot wait to eventually have time and finances to start keeping bees outside my own door.

Please contact them if you are interested: Olivia Wischmeyer, <u>owischmeyer@gmail.com</u>, 720-474-0591 Seth Matlick, <u>vidaverdefarm@gmail.com</u>, 505-933-1106

Become a Member of NMBKA

oin the NMBKA Hive for \$30! Help support NMBKA by becoming a paid member. NMBKA is an all-volunteer not-for-profit organization, so all of your contributions are going toward supporting our programs, including the Certified Beekeeper program and this newsletter. Annual dues are only \$30 for the family.

Membership includes admission to, and recordings of, the Winter Conference, Summer Conference and any other program. Plus it's the right thing to do to support beekeeping in New Mexico.

You can join or renew on the our website <u>www.nmbeekeepers.org</u>. Or if you prefer to join or renew by mail, please request a membership form on the website, complete, and mail along with \$30 to:

NMBKA PO Box 21615 Albuquerque, NM 87154

Thank you! We can't do it without you!

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