

Nov 2015

Catch The Buzz™

Bee Culture®

The Magazine Of American Beekeeping

www.BeeCulture.com

Horizontal Hive Advantages

Managing Comb

Persimmons As Bee Plants

ROOT PUBLICATIONS \$4.99



7 35046 20163 9

MAKE THE PERFECT HOLIDAY GIFT!

Show someone you care by making them a gift.

Handcrafted *Soaps,*
Candles, Lip Balms and
Skin Care products.



Get your beginner's kits and start crafting!

www.BrushyMountainBeeFarm.com | 1-800-233-7929



Brushy Mountain Bee Farm
Serving Beekeepers with the Best Since 1977

BEST QUALITY | BEST SERVICE | BEST SUPPORT

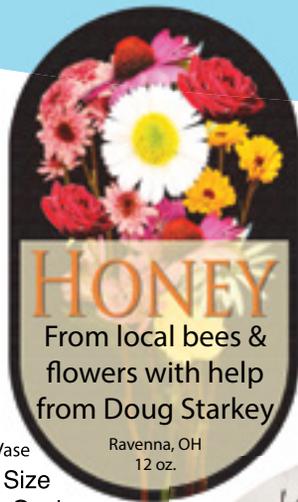
Blue Sky beehive



Blue Sky Bee Supply

930 N. Freedom
Ravenna, OH 442466

152 Victorian
Actual Size
Large Oval



160 Vase
Actual Size
Medium Oval

Step 1: Choose from our 7 Stock Designs, or Choose to provide your own artwork



153 Bear



125 Sunrise



157 Skep



155 Retro

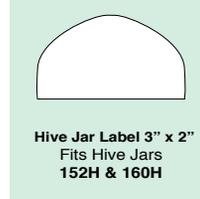


159 Sundance

Order Labels for your Honey Containers

A professional, attractive label can enhance your ability to sell more honey. Your product deserves to look it's best! We've made our designs with an eye towards the presentation of your honey to the consumer. Try one of these beautifully designed labels and watch your sales fly!

Step 2: Choose the size of the label you would like



Step 3: Choose the quantity of labels you need

Stock Label Orders
500 \$74.99 + \$9 shipping
1000 \$115 + \$11 shipping

Step 4: Choose the copy you would like on your labels, up to 6 lines



Lipbalm Labels Available

Use interesting descriptions to draw closer attention to your product. Include the region from which your honey is collected or the different varieties as well as your name, address, and weight. Here are some BUZZ words to try...

- Unprocessed
- Unfiltered
- Unheated
- Pure
- Natural
- Raw
- Wildflower
- Clover
- Goldenrod
- Blueberry
- Apple Blossom
- Early Summer

Or choose to go Full Custom...

Let us design something totally original for you. Your Full Custom price includes an hour of design time, after that we charge \$35/hour these labels are chemical and water resistant

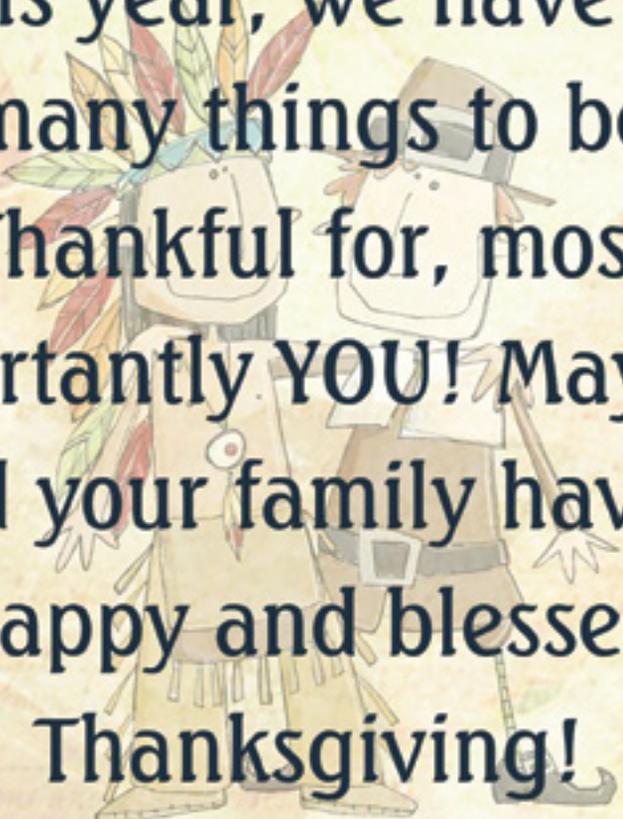
Full Custom Orders
500 \$110 + \$9 shipping
1000 \$150 + \$11 shipping



THANK YOU,

WE ARE FOREVER GRATEFUL!!

This year, we have so many things to be Thankful for, most importantly **YOU!** May you and your family have a happy and blessed Thanksgiving!

A cartoon illustration of a Native American woman on the left wearing a feathered headdress and a fringed dress, and a Pilgrim man on the right wearing a hat, a white shirt, and a brown vest. They are standing in front of a background of autumn leaves.

From Rossman Apiaries Staff and Family

In all things, give thanks. 1 Thessalonians 5:18



PO Box 909 Moultrie, GA 31776~800-333-7677~www.gabees.com



HERE AT DADANT WE PRIDE OURSELVES ON PRODUCING TOP OF THE LINE HONEY BEE FEEDS TO FORTIFY COLONY HEALTH AND BUILD RESISTANCE TO THE PROBLEMS PREVALENT IN TODAY'S APIARIES.



AP23®

Artificial Pollen 23

WINTER PATTIES

WITH HONEY-B-HEALTHY

M0016010PHW –
Ctn/ 10 patties / **\$22.80**

M0016040PHW –
Ctn/ 40 patties / **\$48.30**

AP23®

PATTIES

M0016010PH – Ctn/ 10 patties

1 -3 **\$24.70**

4 -10 **\$22.70**

11 + **\$19.95**

M0016040PH – Ctn/ 40 patties

1 - 20 **\$68.25**

21 - 39 **\$66.25**

40 - 159 **\$62.50**

160 + **\$57.25**

DRY FEED

M0016005 – 5 lb bag

1-10 **\$18.95 ea.**

11+ **\$18.50 ea..**

M0016040 – 40 lb bag

1-3 **\$71.95 ea.**

4-10 **\$68.75 ea.**

11-39 **\$64.75 ea.**

40-159 **\$62.35 ea.**

160+ **\$59.50 ea.**



FEED **AP23** FOR A
HEALTHY BEE!

Brood Builder

PATTIES

M0014640HHN – Brood Builder Patties with
Honey-B-Healthy & Nozevit **\$73.60 / 40 lb. box**

DRY FEED – **M0014625** – 25 lb bag

1-5 **\$39.50 ea.**

6-10 **\$37.50 ea.**

11-up **\$33.50 ea.**



Check your local branch for pricing

www.dadant.com

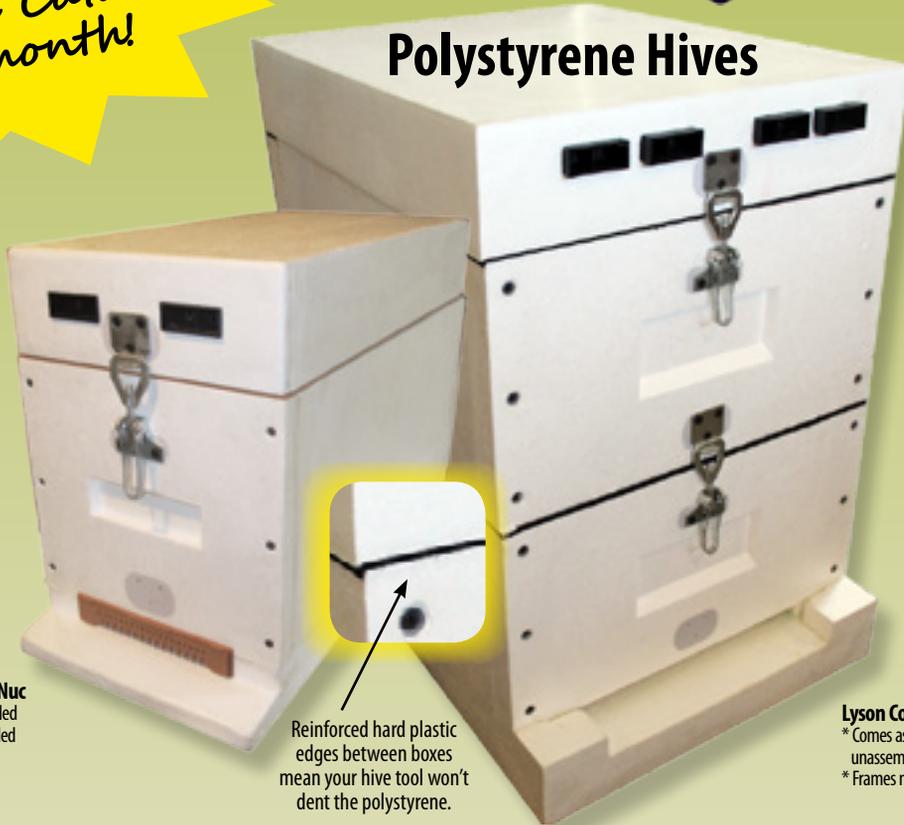


51 S. SECOND STREET, HAMILTON IL 62341 • PHONE (217) 847-3324 • FAX (217) 847-3660 • TOLL FREE 1-888-922-1293
• CHICO, CA (877) 332-3268 • FRESNO, CA (877) 432-3268 • PARIS, TX (877) 632-3268 • SIOUX CITY, IA (877) 732-3268 •
• WATERTOWN, WI (877) 232-3268 • ALBION, MI (877) 932-3268 • WAVERLY, NY (877) 532-3268 •
• CHATHAM, VA (800) 220-8325 • FRANKFORT, KY (888) 932-3268 • HIGH SPRINGS, FL (877) 832-3268 •

Stay Warm, Tight & Light

LYSON

Polystyrene Hives



Look for your
2016
Betterbee Catalog
this month!

6 Frame Nuc Box

- Vented bottom board and cover allow you to adjust airflow
- Latches adjust to hold cover securely in place
- 1" walls provide more insulating protection than wood
- Reinforced hard plastic edges between boxes
- Nuc deep super available!

Lyson 6 Frame Nuc
* Comes unassembled
* Frames not included

Reinforced hard plastic edges between boxes mean your hive tool won't dent the polystyrene.

Complete Hive

- 10 frame hive comes with outer cover, two deep hive bodies and bottom board
- 1-5/8" walls provide more insulating protection than wood
- Customize outer cover with ventilation with polystyrene and vented plugs
- Screened bottom board with removable tray
- Reinforced hard plastic edges between boxes
- Integrated frame rest
- Extra deeps and mediums available

Lyson Complete Hive
* Comes assembled or unassembled
* Frames not included

We also have a large selection of books for winter reading!



Betterbee

**Beekeepers
Serving
Beekeepers**

Bee Culture

November Features . . .

NEW PRODUCTS & BOOKS 15

Books – *Beyond The War On Invasive Species; A Beekeeper's Progress; Fire The Landscaper.* DVD – *Beekeeper Training.*

APIMONDIA 2015 28

The 44th International Congress.

Ann Harman

A CASE FOR HONEY 35

So you want to grow your business.

THE INDISPENSABLE HONEY BEE, 1973 37

Clarence Benson, president AHPA.

G. Splevin

DRUM PROCESSING 41

Small time.

Ed Simon

BUILD A DRUM DOLLY 43

55 gallon.

Ed Simon

A HOLIDAY MEAL WITH HONEY 46

Excerpts from Honey by Angelo Proeperi-Porta.

ESTABLISHING A VARROA RESISTANT POPULATION 48

In Your Apiary

Roger Hoopingarner

HORIZONTAL ADVANTAGE 67

Look, listen, and consider.

Leo Sharashkin

THE BOTTOM BOARD 81

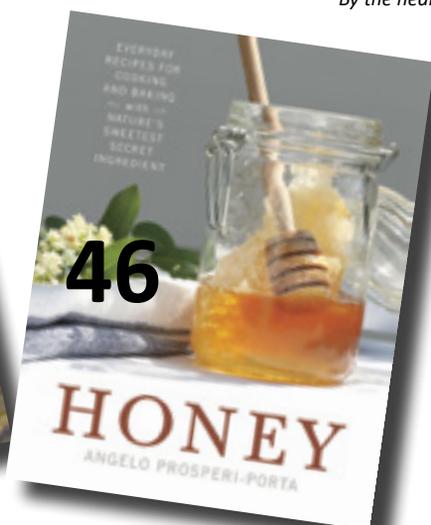
Different kinds – old and new.

Jim Thompson

LETTERS FROM A BEEKEEPER'S WIFE 87

By the hearth, November 1, 1917.

Mary



800.289.7668

Executive Publisher – John Root

Associate Publisher, Senior Editor – Kim Flottum, Kim@BeeCulture.com, Ext. 3214

Assistant Editor, Design – Kathy Summers, Kathy@BeeCulture.com, Ext. 3215

Social Media & Event Specialist – Amanda DeSimone, Amanda@BeeCulture.com, Ext. 3255

Advertising – Jean Newcombe, JNewcombe@BeeCulture.com, Ext. 3216

Contributors

Clarence Collison • James E. Tew • Ann Harman • Kim Lehman • Phil Craft • Larry Connor
Connie Krochmal • Jessica Louque • Jeff Harris • Toni Burnham • Ross Conrad • Jennifer Berry • Ed Colby

POSTMASTER: Send address changes to
BEE CULTURE, The A.I. Root Co., 623 W. Liberty St., Medina, OH 44256

Subscription Information

U.S., one year, \$25; two years, \$48. Newsstand price: \$4.99. All other countries, (U.S. Currency only), \$20.00 per year additional for postage. Digital Edition \$15. Send remittance by money order, bank draft, express money order, or check or credit card. Bee Culture (ISSN 1071-3190), November 2015, Volume 143, Issue 11, is published monthly by The A.I. Root Co., 623 W. Liberty Street, Medina, OH 44256. Periodicals Postage Paid at Medina, OH and additional mailing offices.

Subscriptions, Book Orders – 800.289.7668, Ext. 3220 • www.BeeCulture.com • info@BeeCulture.com

Advertising – 800.289.7668, Ext. 3216; JNewcombe@BeeCulture.com

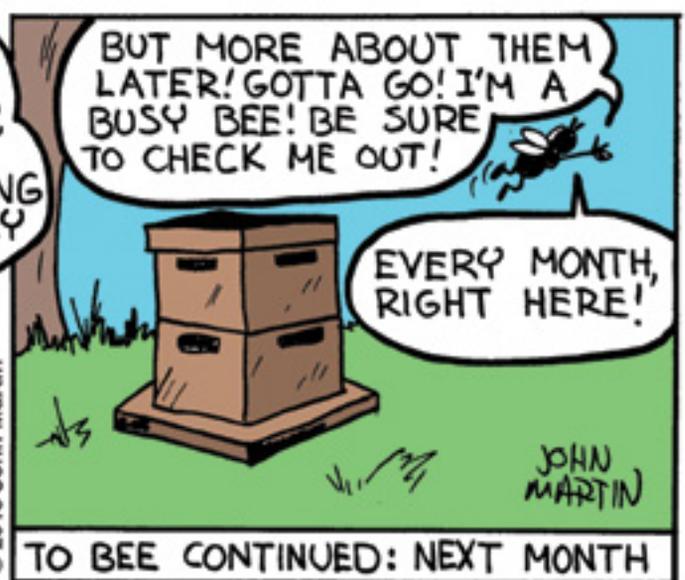
Published by The A.I. Root Co. Copyright© 2015. All rights reserved.



Packing Up – photo by Rose Zak, Brainerd, MN – runner up from a recent calendar contest.

HONEYCOMB HANNAH

By
John
Martin

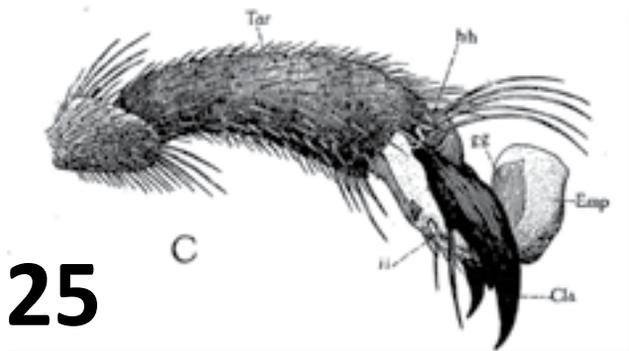


© 2015 John Martin

TO BEE CONTINUED: NEXT MONTH

Bee Culture's Best . . .

CLARENCE COLLISON <i>A Closer Look – Tarsal Glands/Footprint Pheromone</i>	25
JAMES E. TEW <i>Beeyard Thoughts, Observations and Updates</i>	31
PHIL CRAFT <i>Ask Phil – Managing comb building for new comb.</i>	52
LARRY CONNOR <i>Colony Development, Part 2.</i>	59
MICHELE COLOPY <i>Pollinator Stewardship – Protecting pollinators takes funding.</i>	64
ROSS CONRAD <i>Screened bottom board.</i>	72
CONNIE KROCHMAL <i>Persimmons for the bee garden.</i>	75
ANN HARMAN <i>It's your club – do something.</i>	79
JESSICA LOUQUE <i>Bigger Picture – Holidays in a honey daze.</i>	88
ED COLBY <i>An epiphany.</i>	96



In Every Month –	
Honeycomb Hannah <i>See what goes on in the hive.</i>	6
Mailbox	9
Honey Market Report <i>2015 Honey Crop Report.</i>	18
The Inner Cover <i>All natural.</i>	20
It's Summers Time! <i>Fall, chickens and ducks.</i>	23
Gleanings	91

WEEKEND WRISTBAND
PASSES
On Sale!



MOTHER EARTH NEWS

FAIR

NEW!
BELTON ★ TEXAS
FEB. 20-21, 2016

ASHEVILLE ★ N.C.
APRIL 9-10, 2016

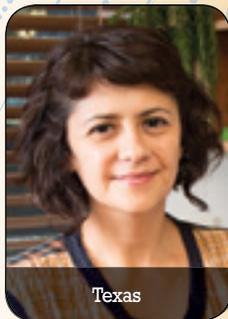
ALBANY ★ ORE.
JUNE 4-5, 2016

FUN-FILLED, HANDS-ON SUSTAINABLE LIFESTYLE EVENTS



Texas, Oregon
& North Carolina

JOEL SALATIN
Author, Lecturer,
American Farmer



Texas

CLAUDIA LUCERO
Author of
One-Hour Cheese



Texas, Oregon
& North Carolina

KIM FLOTTUM
Editor of *Bee Culture*
Magazine, Beekeeper



Texas &
North Carolina

BARBARA PLEASANT
Organic Gardening and
Real Food Expert, Author



Texas

ELIOT COLEMAN
Organic Farming
Expert, Author

**Experience more than 150 practical workshops presented
by the nation's leading experts at each unique event!**

**RENEWABLE ENERGY ★ SMALL-SCALE AGRICULTURE ★ DIY ★ GARDENING ★ GREEN BUILDING
ECO-FRIENDLY MARKETPLACE ★ CHILDREN'S ACTIVITIES ★ 17 & UNDER GET IN FREE!**

Pre-order your weekend wristband passes now and save!

Order today at www.MotherEarthNewsFair.com or call 800-234-3368.

Stay up to date online at www.MotherEarthNewsFair.com

Sign up for the free MOTHER EARTH NEWS FAIR weekly newsletter ★ Find discount lodging

Get up-to-date program information Check out our exhibitors ★ Learn about our sponsors



YANMAR



Oxalic Acid

I'd like to take exception to one point made by Jennifer Berry in her well written article published in *Bee Culture* in June 2015. In the article she writes "At beekeeping meetings, when chatting about this product to others, I heard folks say that they are applying oxalic acid once-a-week for three weeks during the Summer months. "Ms. Berry continues with "This isn't really advisable since it's not very effective and can be detrimental to the bees!

That's true but only when **dribbling** oxalic acid. Ms. Berry did not differentiate dribbling versus vaporization.

Summer time treat with **vaporized** oxalic acid is very effective and is not detrimental to the bees at all. It does no harm to the brood, bees or queen. While OAV (Oxalic Acid Vaporization) will not kill mites within the brood, it will kill greater than 90% of the phoretic mites. So if one were perform three treatments seven days apart, they would kill greater than 90% of the existing phoretic mites, 90% of the emerging mites and 90% of the mites missed during the previous vaporization. This treatment would cover the entire brood cycle thus almost eliminating the mites in the colony.

Lawrence Welle
OxaVap LLC

Spiders & Bees

I have just finished reading the August printing and I was astounded by Mr. Ed Colby's column. As beekeepers, we are engrained with being good stewards as much as possible. I think it is disgraceful that Mr. Colby did not intervene and allowed that honey bee to be cannibalized by that spider. When my husband and I do hive inspections, we do lose some girls – but not through our own negligence. It upsets both of us when we accidentally crush one of our girls. I also go out of my way to save them when they land on their back on their porch due to rain. I have saved many girls that way. Mr. Colby should be ashamed of himself. It seems to me he is treating his girls more like a commodity and has lost sight of his

true calling as a beekeeper. Insect life is NOT cheap and should never be contemplated in that venue! You do need to consider the individual bee or you may end up without a colony.

Jacci Usack

Author's Response: *Jacci, it touches me that you rescue your little darlings when you can. But consider this: The Good Lord gave us honey bees, but God also made spiders to eat them. This was not a green-fanged vegetarian spider. She looked hungry. I rest my case.*

GA Prison Program

I have just finished reading your current issue of *Bee Culture*, September 2015. I have been a bee follower for some time now. I am writing to thank you for an amazing magazine.

One article, in particular, excited me and that was Jennifer Berry's article about a bee program at the Smith State Prison in Georgia.

I am a prisoner of the State of Michigan. I would love to get a bee program started here, as well as a few others, who I've chatted with. The only problem is I have no idea where to begin, who to talk to or how to become certified as a Master Beekeeper.

Is there a possibility that you may have answers on how to accomplish this or who I can talk to.

We prisoners do not have internet access so there is little I can do.

Again thank you for your magazine and thank you Jennifer Berry for your article.

Sean Wilson
Muskegon, MI

Apitherapy Experience

I have enjoyed your magazine for many years and never thought

*Is It A Coincidence That
A Large Group Of
Baboons Is Called A
Congress!*

Bee Culture

623 West Liberty St.
Medina, OH 44256
mailbox@beeculture.com



I'd write a letter. But I feel that someone might be interested in my experience with apitherapy. Last year I fell on my left shoulder and needed a rotator cuff operation. My surgeon gave me a cortisone shot and miraculously the pain stopped. Several months later I fell off my truck onto the same shoulder a second time. The pain made it hard to sleep at times so I used a pair of tweezers to hold a bee so she could sting my shoulder. Very soon the sting stopped hurting and the shoulder pain left.

I have read that bee venom stimulates the body to produce cortisone, and just like the shot, the sting has given me relief. I know of several people who have also used bee stings to relieve muscle pain in the shoulder area, and their pain also ended. Isn't the honey bee amazing!

Mark Hohmann
Napa, CA

Editor's Note: *And in more ways than the simple pain relief you experienced. The American Apitherapy Society (www.apitherapy.org) share all manner of ways the honey bee is helpful. Check them out. Be careful on that truck!*

Subscription Renewal

How are you? I've been a subscriber for several years, we are retiring to our farm in Wisconsin later this year.

Anyway, jeez I love the magazine! Your articles, the content, the whole package. What a breath of fresh air, as beekeeping has become a serious undertaking,



with the die offs being so severe. I've had as many as 12 hives over nine years, but try to maintain five. Very hard to get them to survive more than one year, two at most. Hoping for some colony that shows resilience, nothing goes past two years. I am surrounded by modified corn, while I have 93 acres, I'm in the middle of thousands of acres of corn and cows. I have entertained the idea of planting native or bee nurturing flowers on my property, to have a source for the bees that was of a cleaner/pure nature, time has not allowed that concept for me until now, with the upcoming retirement.

I do have mostly wooded acreage, with some sparse open or flowering areas. I'm afraid I have noticed a die off of flowering plants/fauna in too large an area to define.

While driving the roads, there are little/no flowers, natural or man planted anywhere. Gardens/flowerbeds, of course, but roadsides or fields, no. Pretty much the same for my property, some native/wild flowers, certainly not something on a wholesale level, or something

to sustain the bees comfortably. The more I look, the less flowering plants I'm seeing, my fear is the planting practices of today, along with the chemical uses, by both farms and DOT applications, is changing the landscape. Add the power companies using a defoliant to control tree growth around their wires, to save time trimming, it's a chemical quagmire, (even though I'm organic). The removal of hedge rows that once separated properties is becoming a thing of the past. Every square inch of soil that can be used for corn is surrendered, for a few extra plants.

These combinations result in green only vegetation everywhere, not flowers, but grasses and weeds, that can tolerate the chemical use and farming practices of today. If roadside flowers exist, I'm not seeing them. It's like a dead zone for bees, where do they find nectar? There's no nectar in grass. Even when it's available, it's of a seasonal nature, like spring with fruit trees, or perennial flowering plants. No one around me is planting clover, or rotating on a three year cycle anymore. Even if they were to plant clover, I suspect systemic pesticides would be in the soil from prior plantings. My direct neighbor plants corn EVERY year, with heavy nitrogen use to sustain this approach. How can the bees survive long term?

Well, enough of that, keep up the good work, you are always

welcome to stop by and visit if you're in the area!

John Bronski
Viola, WI

Missing Bees

July 22 I went out to observe my hives. Two days earlier I had observed the hives and they were OK and working very productively. Some times I go out to observe the hives without opening anything. I leave a plastic lawn chair there at about 15 feet in front of the hives at a 30° angle to the left of the front of the hives. I have an alarm system on a post to protect the hives from bears and other predators. I like watching the bees rate of action coming and going at the entrance of the hive. I very soon noted NO bee action at one of the hives. I shut off the alarm and rapped on the side of the hive. There was no reaction at the entry so I opened the hive. The hive was completely empty of bees, not even any dead bees. There was still a pollen patty on top of the frames, but no bees. I have never seen anything like this.

There was only two hives, Styrofoam hives from Betterbee. The bees were Russian bees. The other hive is perfectly normal. I also keep a bird bath, about 25 feet in front of the hives for water. The hives are facing south and they get shade from a pine tree at about 2 o'clock in the afternoon. I used to keep Italian bees in Connecticut. I switched to Russians a couple of

Bee-Z-Smoker



*Use discount code
BCMAG
excludes shipping & handling

Cool Bee Smoke, Without the Choke!®

What? A long-lasting, rebuild-able power tool that produces cool smoke without fire.

How? Easy, safe, efficient heating element 'toasts' kiln-dried pine shavings, creating a bed of embers. Smoke is blown out the spout with a fan.

Why? In the end it's about the time spent with your bees – not your smoker!

Order your beekeeping power tool for \$134.99 - use discount code BCMAG - excludes shipping and handling. Visit our website for EZ video demonstrations and proper usage techniques.



\$134.99*

www.BeeZSmoker.com
603-446-7913 | info@beezsmoker.com

years ago because of the long and colder Winters here in upper NY (40 miles from the U.S./Canadian border).

Any idea on what happened to these bees? The only regretful thing that I can think of is that someone opened the hive at night and left it open while I was away, then closed it up the next day.

What do you think?

Jim Furr
Glenfield, NY

Editor's Note: Without more information we can only guess about this. The first inclination is that they absconded because of a high Varroa population and the bee population had a large majority of the brood infested with mites, and the adults with viruses. But perhaps others can offer other insights.

Responding To Randy Oliver

After reading Randy Oliver's review of Dr. Alex Lu's most recent study (1), I decided that a fact check needed to be done of Randy's review.

I have always considered myself a conservationist. I hunt, fish, and enjoy the outdoors. I am a Farm Bureau member, and sat eight+ years on my home town conservation board. What I always find interesting is that when I question a chemical company's research, I am labeled an environmentalist – a label I wear proudly because the opposite of an environmentalist is a polluter.

Mr. Oliver wrote; "neonic's are not DDT. They don't bio accumulate."

(1) This is true. Neonicotinoids do not bio accumulate like DDT. However, by weight it only takes 4 ng of imidacloprid to kill a honey bee. It takes 27,000ng of DDT to kill a honey bee. (2) So neonics are more lethal to bees and other insects than DDT. (2)

Mr. Oliver continues by writing "nor do they appear to build up in the soil to any appreciable extent despite repeated use". This is a false statement. A wealth of research has shown imidacloprid half-life at over 100 days and some as high as 1,000 days. (2), (3), (4) Similarly, an EPA environmental risk assessment of clothianidin reported half-life values of up to 19 years in heavy soils. (5) With most seed treatments, the plant only absorbs 5% of the active neonicotinoid ingredient, leaving roughly 95% of the chemical to stay in the soil and runoff in water.(4)

Water studies done by the U.S. Geological Survey(6) from 2011-2014 in 24 states and Puerto Rico showed 63% of the streams and rivers tested positively for at least one of the six neonics with detection of imidacloprid in 37% of samples. Neonic residues have also been found in water samples taken from numerous states including New York and Florida.(7) One water study in Florida pulled samples from a 41-inch depth and found imidacloprid residues of 120ppb.(7)

Mr. Oliver goes on to say that EPA, "does a great job of following its mandate to use the best science



to carefully regulate pesticides to avoid 'unreasonable risk to man or the environment.'" I believe that this depends on your point of view. For its pesticide risk assessments, the EPA relies heavily on industry generated data. Independent research from independent scientists is not weighed in the same light, as we were told by Mr. Jim Jones, Assistant Administrator for EPA's Office of Chemical Safety and Pollution Prevention. In my opinion, the Ag chemical companies are not going to show the EPA data that would pull a multimillion dollar product off the market place.

Now I agree with Mr. Oliver it is not one product in the environment that is causing harm. However, since 2000 in England on canola crops alone, neonic use went from less than 1% used on that canola crop to 75% of the seed that was treated in 2010. (8) In the United States neonics are applied to an estimated 150 million acres of crop land. There are certainly a sufficient number of studies that show too much of anything is bad, and the over use of neonics fits into this category.

A large issue with neonics is the fact that they cannot be washed off of

Best Quality Containers

Bears Skep Ovals

Order Online
www.sailorplastics.com

MADE IN THE USA

VISA AMERICAN EXPRESS
MasterCard DISCOVER

1-800-380-7429

Happy Thanksgiving



the outside of fruits and vegetables, unlike non-systemic pesticides. This alone does not mean that the neonicotinoids are the cause of all of our health problems. However, imidacloprid is the most frequently used neonic and in 2008 neonics represented 80% of all seed treatment sales in the world. They represent 24% of the global market sales of insecticides. (7) So, with a product that has been detected in a vast majority of all ecosystems in the U.S., I believe there is a strong concern that it could have long term health risks for the environment and countless species, including our own.

So in conclusion although some of Mr. Oliver's statements are true, he minimizes the impacts of studies shown, by siting studies that are weak on drawing a conclusion to show that neonics are a problem, or only to show their minimum effects. There are many more studies by many reputable researchers that Mr. Oliver fails to site.

I hope readers will place more value on the data and research and not just on Mr. Oliver's words. The data speaks volumes as to the issue of why honey bees are dying. You do not need Mr. Oliver, or I, to tell you what the data means. Your bees have been telling you for years with poor honey crops, high winter and Summer losses, and bees that just do not look right. Listen to your bees, they know the truth.

Thank you.

James E. Doan
Doan Family Farms
jdoan@rochester.rr.com

References

#1- Distributions of neonicotinoid insecticides in the Commonwealth of Massachusetts: a temporal and spatial variation analysis for pollen and honey samples. By; Chensheng (Alex) Lu, Chi-Hsuan Chang, Lin Tao, and Mei Chen. Dept. of Environmental Health,

Harvard T.H. Chan School of Public Health. 665 Huntington Avenue, Building 1, Room G3, Boston, MA 02115 USA. Corresponding author. E-mail; cslu@hsph.harvard.edu. Environmental chemistry-
[Http://dx.doi.org/10.1071/EN15064](http://dx.doi.org/10.1071/EN15064). Submitted: 26 March 2015 Accepted: 29 April 2015 Published on line: 24 July 2015

#2- Bees, Pesticides and Politics: the impact of neonicotinoids on UK bumblebees. Wednesday 18th. of March 2015 at Plymouth University by Professor Dave Goulson

#3- Miles Inc., Imidacloprid: Pesticide leaching potential model. Report No. 105008 1993

#4- Goulson, D., 2014. Pesticides linked to bird declines. Nature. [doi:10.1038/nature13642](https://doi.org/10.1038/nature13642)

#5- De Cant, J. & Barrett, M. (2010). Clothianidin registration of prosper T400 seed treatment on mustard seed (oilseed and condiment) and Poncho/Votivo seed treatment on cotton. United States Environmental Protection Agency report, 2 November 2010.

#6- First national-scale reconnaissance of neonicotinoid insecticides in the streams across the USA: Environmental Chemistry, [doi: 10.1071/EN15061](https://doi.org/10.1071/EN15061). By: Hladik, M. L., and Kolpin, D. W., 2015

#7- Environmental Fate of Imidacloprid Revised by Matthew Fossen PhD. Environmental Monitoring. Department of Pesticide Regulation.

#7- Peter Jeschke, Ralf Nauen, Michael Schindler, Alfred Ebert, 2001. Overview of the Status and Global Strategy for Neonicotinoids. Journal of Agriculture and Food Chemistry 59, 2897-2908

#8- Evidence for pollinator cost and farming benefits of neonicotinoid seed coatings on oilseed rape. G.E. Budge, D. Garthwaite, S. Pietravalle Scientific Report #5, Article number 12574(2015) [doi; 10.1038/srep12574](https://doi.org/10.1038/srep12574) Agroecology/Environmental science Received: 20 February 2015 Accepted: 25 June 2015 Published Online 20 August 2015.

Project Apis m. ...is the largest non-governmental, non-profit honey bee research organization in the USA.

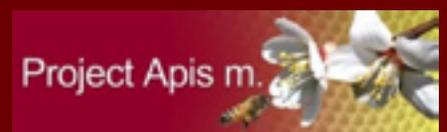
PAm is dedicated to enhancing the health of honey bees while improving crop and honey production



PAm has infused nearly \$4 million into bee research since 2006:

- * Developed BMPs
- * Expanded forage resources
- * Forged new technologies
- * Discovered new pathogens
- * Purchased cryopreservation unit for Washington State University
- * Purchased Nexcelom for NC State to assess queen quality
- * Supported Tech Transfer Teams

You can help support PAm at www.ProjectApism.org



Questions and Answers

This month we have a questions and answer exchange between Ross Conrad and Dan Smith.

Dan: I loved your article on honey in this September issue of *Bee Culture*, but was left with a few questions. I tend to use one of those common screen sieves before bottling my extracted honey (those round stainless steel ones that fit into the top of a five gallon honey bucket), allowing the centrifuged honey to flow into and through the sieve and then into the bucket where I let it further settle for about a day or so before bottling. The sieve actually has two screens in it, one about the size of a window screen and one a bit finer (but not super fine). I'm sure you are familiar with this item

Ross: Very. I have one that I used to use all the time before I switched to using a settling tank.

Dan: Anyway, in addition to removing the "big chunks" of wax, debris, and bee parts, does this method also allow the pollen to pass into the collected honey? Does the pollen make its way through the accumulated mass of debris and wax that's in the sieve, as it slowly drips into the bucket? Or is the pollen and other good things trapped in the muck?

Ross: The sieve traps most of the debris in the honey, but since pollen grains are microscopic, many of them will pass through the sieve (and the "muck") and make into the final product...just not as much as would be in the honey if the sieve were not used. The large chunks are much more noticeable to the naked eye than the tiny pollen grains.

Dan: Do you consider a "sieve" like I'm using different from a "filter"? Regarding the title of your article, "unheated and unfiltered," I never heat anything (not the honey nor the decapping knife), but would you consider my sieve-processed honey as "unfiltered", and thus "raw"?

Ross: I consider honey that passes through a screen of some kind due to the force of gravity to be much different from honey that is pumped

at high pressure through very fine openings (a filter). Despite there not being an "official" definition, I would consider your honey to be strained, not filtered and therefore raw, unheated and unfiltered.

Dan: Do I understand correctly that what you're saying in your article is that no filtering (or sieves ??) of any variety can be used if the extracted honey is to be considered "raw", that its best to simply let the extracted honey flow directly from the extractor into the five gallon bucket (with no filters or sieves of any kind in between). Then, let things settle for a day or two before bottling - or longer, until all but the top inch or so of honey is relatively free of debris. Everything below the half-inch of muck would be relatively clear and the most usable part, and it would be "raw". Is this what you're recommending in your article?

Ross: What you describe is what I have evolved into. I started with the sieve like you are doing, but eventually grew my operation so that the amount of honey I needed to strain through the sieve became too cumbersome. I use a 20-frame extractor and I found that after about three loads, the sieve got so clogged with debris that it had to be cleaned before another load could be run through it. This greatly slowed down the extracting process, so I moved to skipping the sieve and just letting the honey settle in a tank before drawing the relatively clean honey off the bottom as you describe.

Dan: Second question, a bit of a tangent, not related to your article, but here goes - if I extract honey with greater than 25 % uncapped (nectar filled) cells, will this help the extracted honey not crystalize? More importantly, will it go bad sooner since the moisture content will be greater than 18%? Like you, I prefer my honey crystalized, but some of the friends I give my honey to have requested a more liquid version. Not a big deal, but I was just wondering if you've had any experience with this.

Ross: I have found that high moisture honey will crystallize just as well as low moisture honey. I have never had any high moisture honey "go bad." I find that over time some

fermentation may occur and this can alter the flavor of the honey and even make the honey slightly frothy, but the honey is still perfectly edible and the beneficial bacteria in the fermented honey may even offer some health benefits to the consumer. Such honey is also great for making mead.

Dan: I am a hobby beekeeper, I have three backyard hives which run along an urban creek in Southern California. Even though the creek is dry much of the year (especially now, given our drought), there seems to always be plenty of forage for them and they are generally in excellent health. However, I do worry about agricultural contaminants, especially given the state of our local citrus industry and their dependence on neonics. I've been keeping bees for about three years.

Ross: I worry about neonics and other ag contaminants as well. That is why I try to cycle out my old combs and replace them with newly drawn comb after several years, support non-chemical agriculture as much as possible, and avoid using or purchasing ag chemicals (and products produced with ag chemicals) whenever possible.

Dan: As I say, I understand that you may not have time to respond to my questions, but since I always enjoy your articles, and respect your knowledge (your *Natural Beekeeping* continues to be my bible), I thought I'd jot you this note. Whether you have time to answer my queries or not, I wish you the best and hope you continue to share your wealth if information with us all.

Ross: It is good to know that *Natural Beekeeping* has been helpful to you as your take part in your beekeeping adventures. Thanks again for taking the time to get in touch.



Kelley Beekeeping

SERVING THE BEEKEEPER SINCE 1924

KEEP YOUR HIVE ENGERIZED!

Winter Patties



Winter patties: for those colonies running low on honey stores and those needing emergency food. Carbohydrate loaded patties contain Honey Bee Healthy and around 3% protein. 2-4 patties can be fed at a time (do not remove the paper backing and lay on the topbars of your frames). Can be fed throughout the winter months and into early spring when warm enough to open the hive.

Qty.	Item No.	Price
(5) 1lb Patties.....	7709-A	\$10.00
(10) 1lb Patties.....	7709-B	\$18.00

Also, Don't forget....



Kelley Mouse Guard

Great way to keep mice out of your hives. It screws to the front of the hive. Screws are included. Ship wt: 5.5 oz

10 Frame	279-KMG	\$4.95
8 Frame	279-KMG-8	\$4.95



Mouse Guard

Keep field mice from entering your hives during fall and winter. These guards are punched with 3/8" holes and made from 20 gauge stainless steel. Two pre-drilled holes are present for attaching to hive. Screws not included. 10 Frame only. Ship wt: 3.9 oz

Item No. 279-MG.....	\$4.85
----------------------	--------



Entrance Reducers

Entrance reducers control the size of the opening of your hive. They should be installed between your bottom board and your first brood box.

10 Frame	55-NA	\$1.25
8 Frame.....	55-NA-8.....	\$1.25



1-800-233-2899



Kelley Beekeeping
SERVING THE BEEKEEPER SINCE 1924

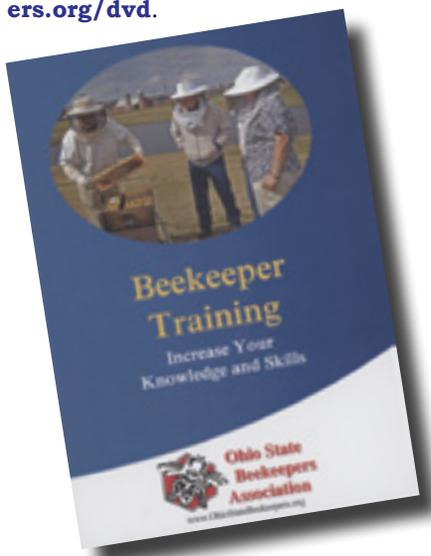
www.kelleybees.com

What's New This Month —

Beekeeper Training DVDs, with Jim Tew and John Grafton. Produced by The Ohio State Beekeeper's Association, supported by the Ohio Produce Growers & Marketers Association. Hosted by Bee Culture Columnist and author Jim Tew, and 34 year Ohio State Apiary Inspector, retired, John Grafton.

There's over 3.5 hours of instruction in this two CD set, with 36 different videos. The videos are short, three to nine minutes, and address practical aspects of elementary beekeeping, including: Assembling Hive Equipment, Frame Assembly, Branding Wooden Equipment, Lighting a Smoker, Spring Bee Flight, Spring Management 1-4, Correcting a Cross-Comb Colony, Refurbishing Hive Equipment, Evaluating a Queen's Performance 1-4, Package Bees 1-2, Hiving Swarms, Laying Workers 1-2, Propolis and Water Foragers, Moving Colonies, Wintering Biology, Basic Hive Equipment, Feeders 1-2, Supers, Protective Equipment, Specialty Equipment, Transferring bees 1-2.

Jim and John are comfortable on screen and each short video is instructive, entertaining, and well made. It is perfect for review, for a beginner who doesn't have access to a class, for instructors...for beekeepers. It's available on line also at www.ohiostatebeekeepers.org for free, but the CD set is only \$24.99, shipping included. Call 567-703-6722, or www.OhioStateBeekeepers.org/dvd.



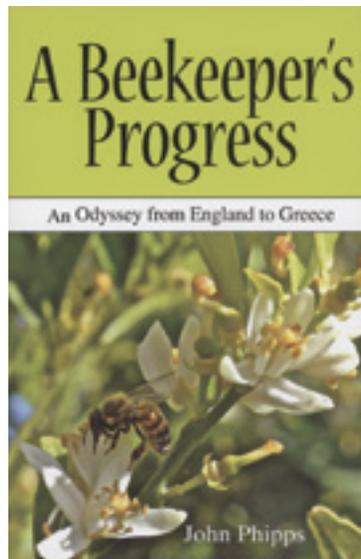
A Beekeeper's Progress. An Odyssey from England to Greece. By John Phipps. ISBN 978-1-906122-56-0. Published by Merlin Unwin Books, Limited. UK. 6" x 9.5" 216 pgs. Black and white photos. \$20 on Amazon.

The number of editors of international beekeeping magazines in the world can be counted on two hands I think. We're a small crowd. We mostly all know about each other, and some have been lucky enough meet some number in person during our careers. I've bee lucky and have met many of our small group over the years. John Phipps is one of those I've met.

John is the editor of *The Beekeeper's Quarterly*, published by Jeremy Burbidge of Northern Bee Books, in the UK. Jeremy's magazine, and John's time at the helm started about 13 years ago, but John moved to Greece several years ago for the climate, the culture and the geography. The wonders of modern technology have enabled him to run this international quarterly from there, while it is laid out and printed in the UK.

This book is his story from childhood to today, plus lots of good beekeeping information scattered about, and lots about the people he's met over the years.

He talks of how he got started with bees, his career as a Rural Studies Secondary school teacher, and finally retirement and having bees as



a business. There are discussions with the inventor of the Apiductor, and device used to listen to a hive and tell if it's going to swarm by the sound, a catenary hive, which was essentially a top bar hive but used decades ago in the UK. He talks of Jentner of queen rearing fame, about being sprayed while making rape honey, and about England's native black bees and BIBBA, the black bee breeding group, and being their newsletter editor after retiring as teacher.

While editor he met Jeremy and together they started an Annual, which listed all the county association in the UK, and finally starting the Quarterly, which was to be totally independent of any beekeeping association's influence, which seemed to be an issue with them. At the time all the other UK publications were sponsored by associations...the British Beekeepers, IBRA and its several pubs, and they wanted no interference from any group.

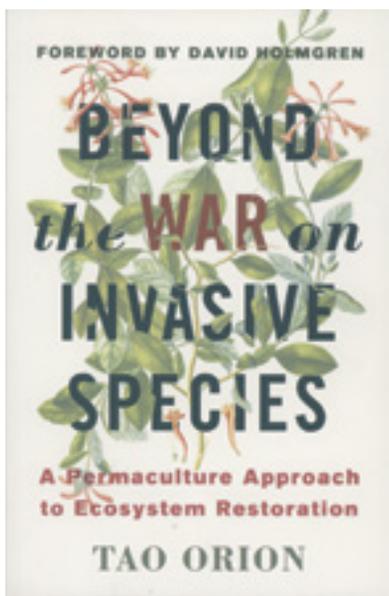
Once started, they definitely wanted an international flair, so engaged regular columnists from most countries of Europe, Russia and others, including our own Ann Harman from the US. And even occasionally, me. And most of them have been regulars since the beginning... with a telling of the bees their only retirement.

John has used his exceptional skills as a teacher, photographer and writer for the magazine and these skills show with every issue (an ad for a subscription is in this issue, it's worth every penny). It is no surprise that John's progress covers a lot of ground, a life's time, and a world of beekeeping information. There aren't many of us that use pens with honey colored ink... John's story is one of the few.

Kim Flottum

Beyond The War on INVASIVE SPECIES. A Permaculture Approach to Ecosystem Restoration. Tao Orion. Chelsea Green Publishing. ISBN 978-1-60358-563-7. 6" x 9", no photos. 254 pgs. Soft cover. \$22.95. available in book stores.

There's a list of almost 400 invasive plants and animals at the back of this book, and by far the greatest number are plants. Some



you already are aware of because of their very public reputation – purple loosestrife, kudzu, Japanese knotweed, privet, dandelion, bindweed, yellow starthistle, and others that have been damned as enemies by almost everyone but beekeepers. But what about corn, cotton, cranberries, almost every bean that grows, and almost every squash pumpkin and melon, too. Grapes don't belong here either, and hundreds more everyday crops and ornamentals came here from somewhere else. Interestingly, that includes us.

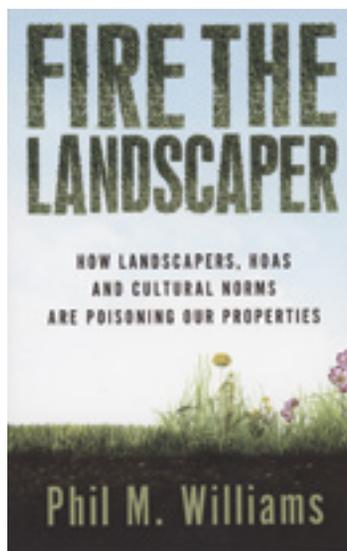
And non-crop invasives have value. For beekeepers, invasives are primary honey producers – because honey bees, too are invasive. Where would the Midwest be without white sweet clover, another enemy, and privet in the south, and in California's central valley, 29 of 32 native butterflies flourish on non-native weeds because agriculture has removed the natives they once dined on. Ah, the central valley. Consider for a moment the monoculture of invasive almonds there, requiring an ocean of water and an avalanche of invasive honey bees every spring for pollination. But this monoculture is deemed fine, while a pond in upstate New York full of purple loosestrife isn't.

The author's point in this book is to quit destroying our world trying to destroy invasives with bulldozers, chemicals, and chainsaws. His thought is that habitat destruction, followed closely by climate change and land use and management changes are paving the way for the

need of a much better plan.

Several opportunities are offered. One scenario offered is managing kudzu, one farm at a time. The farmer raises goats and goat milk on the vine, a beekeeper makes honey to sell to replace the HFCS used in his school, Vines are harvested for compost and roots are harvested and dried to make soup. Restaurants make kudzu tofu and a craftsman makes disposable paper from the stems. In the end, the kudzu is managed for its yields and the community is better for it. It's the long view with invasives that works.

We need to learn to manage our entire ecosystem to accommodate climate change, land use and management changes and the habitat destruction we continue unabated. His background and ethics are based on the guidelines of permaculture: care for the planet, care for people, and reinvest surplus energy, money and resources into regenerative systems. These are the benchmarks and backdrop for dealing with what we call invasive species. That's hard to argue with. *Kim Flottum*



Fire The Landscaper. How Landscapers, HOAs and Cultural Norms Are Poisoning Our Properties. By Phil M. Williams. Self-published. ISBN 978-1-943894-00-0. 5.5" x 8.5". 147 pgs. \$7.99 from Amazon.

In the October issue I told a story about a homeowner who didn't want a lawn, but rather a natural place. She was told by local authorities to make it a lawn, or the cops would make it for her. I asked who

was the criminal. Phil Williams simply screams the answer. It's landscapers, HOAs (home owner associations) and cultural norms (that would be the cops) that should be arrested and locked up.

Phil started his journey mowing lawns in the DC area in 1997 because he couldn't find a job with his sociology degree. Long story short, he started a landscape business in the DC area with a friend. In eight years this was a \$5 million dollar business, he was 29, lived in a \$1.4 million dollar house and was miserable. Issues with depression and basic questions of the status quo of his life and lifestyle spurred him to research his business and his life, and he found he was not part of the solution, but much of the problem. His was not a sustainable life and his business was poisoning the land. A huge house, mowing lawns that needed mowing too often because of the fertilizers and pesticides applied, killing weeds with chemicals, and installing extensive, expensive landscapes so other people could keep up appearances was what he was making millions on. But his life was superficial. So he sold his home, his cars, his business and set out to find a better way. What he found, ultimately were the guidelines of permaculture, organic gardening and ecological landscaping.

Permaculture. There's that word again. As I've grown to understand it - Care for the planet, care for the people, return the surplus.

His book tells us what's wrong, or what he thinks is wrong with the way we do a lot of things, and he makes no bones about it. You can tell by the chapter titles – Obsession with order and conformity, the pesticide treadmill, water, Fire the landscaper, fire the mowing company, stop poisoning your property, Kill the HOA, local ordinances (see above), and live in beauty. The last chapter is a to-do list: learn the benefits of garden weeds, grow polycultures, don't try to control everything, work with nature because she will never tire fixing our mistakes, don't spray pesticides, save water, don't mow often or short, leave the leaves, don't live in a HOA, grow your own food, get involved in your community to fix what's broken.

Did I mention he's a beekeeper?

Kim Flottum

The HONEY
Selecting, Tasting, and Pairing Honey.
With a Guide to More than 30 Varietals } **CONNOISSEUR**

X181 - \$25
C. Marina Marchese & Kim Flottum

REPORT
1976
NATIONAL HONEY COMMISSION
OF THE
NEW AGRICULTURAL RESEARCH CENTER
MADISON, WISCONSIN
THE INDISPENSABLE HONEYBEE
REPRINTED IN 1981
PUBLISHED BY
THE AMERICAN HONEY PRODUCERS ASSOCIATION, INC.

X192 - \$15.99

Learn The Ways Of Honey Tasting & Varietal Honeys

INSECT POLLINATION OF CULTIVATED CROP PLANTS
BY S.E. MCGREGOR
AGRICULTURE HANDBOOK NO. 400
NATIONAL POLAR RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

X181 - \$25

HONEY PLANTS OF NORTH AMERICA
BY JOHN H. LOVELL
1988

X178 - \$34.95

Go to
www.Beeculture.com

ROSS ROUNDS™
Ross Rounds, Inc.

Round comb section equipment
and Sundance pollen traps.

Contact your dealer for supplies.

P.O. Box 11583, Albany, NY 12211
V 518-573-8426
www.rossrounds.com

TABER'S Honey Bee Genetics

Russian Carniolan, Hybrid Italian Queens & Packages

Selected For Winter Survivorship & Mite Resistance

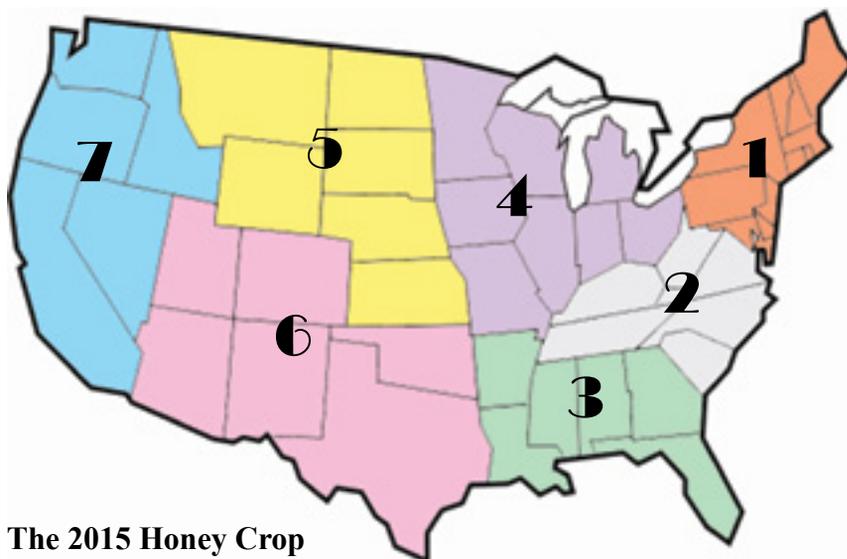
707.449.0440
P.O. Box 1672
Vacaville, CA 95696
www.honeybeegenetics.com

Gold Star Honeybees
Backyard beekeeping for the thinking beekeeper.

Top Bar Hive Kits
Bees • Classes
Tools & Accessories
How-to Videos

GOLDSTARHONEYBEES.COM
207.449.1121

NOVEMBER - REGIONAL HONEY PRICE REPORT



nies producing 6.34 million pounds for a 47.0 lb avg. **Region 2** –, about 34,000 colonies producing 1.63 million pounds for a 47.9 lb avg. **Region 3** – about 383,000 colonies producing 26.4 million pounds for a 69.0 lb avg. **Region 4** – about 353,000 colonies, producing 28.2 million pounds for an 80 lb avg., **Region 5** – about 1 million, 3 thousand colonies, producing only 39.1 million pounds for a 40 lb avg., **Region 6** – about 197,000 colonies, producing 9.5 million pounds for a 48 lb avg, and **Region 7** – with about 547,000 colonies, producing 48.7 million pounds for a 89 lb avg.

Total this, roughly, at 2.65 million colonies, producing right about 159.9 million pounds of honey, up about 6.5% over last year, with per colony yield coming to right about 60.3 lbs., up from 56.6 lb avg. last year. All things considered, not bad.

One other thing we did was ask for a comparison of this year's crop over last year's crop, ranking from 1 being much better, 2 better, 3 average, 4 below average and 5 terrible. We averaged them by region. 1 – 3.11, 2-3.70, 3 – 3.07, 4 – 3.0, 5 – 3.50, 6 – 2.50 and 7 – 2.29. Over all regions the assessment of this year's crop came out to be 3.1, a tad above better than last year. Again, not bad.

The 2015 Honey Crop

Although our prices tend to reflect trends rather than right-now figures, the influx of foreign honey, and its effect on honey prices nationwide is not shown very well in this month's figures. The influx is only 3 or 4 months along, and hasn't saturated the entire US market, but be prepared to see lower prices being offered by packers, and resistance on raising prices from some of your buyers. When you ask where their less expensive honey is coming from expect no answer, or one that offers a non-committal source. Then ask again. Is it from Thailand or

Taiwan? The American Honey Producers have launched a legal action against the Chinese whom they suspect are passing their honey through these two sources. As of early October they were in the battle alone. If you're getting clobbered at the market, you should probably think of lending a financial hand.

The 2015 Honey Crop.

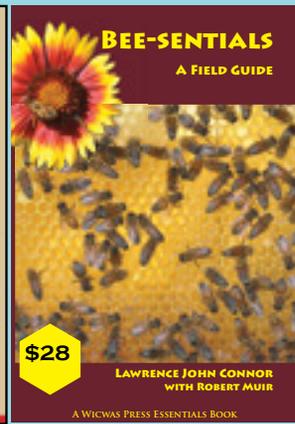
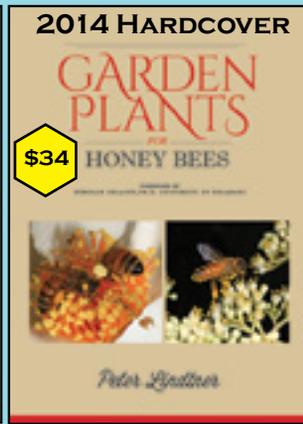
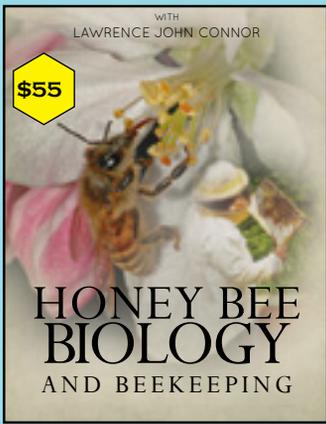
Here's where we go way, way out on a limb again, and try and predict this year's honey crop. We calculate the number of colonies in each re-

gion, then find the average production per colony from each region and the rest is simple math. It's getting there that's the trick.

This year we are suggesting that the number of colonies producing honey, not the total number of colonies is about equal to last year. Yes, losses were high, but make-ups are a tad ahead of last year so all told, it's about equal. Production per colony, however, is up this year, in spite of the erratic weather in some parts. So let's take a look...

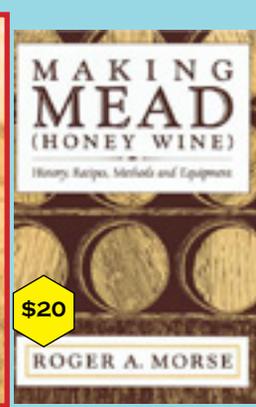
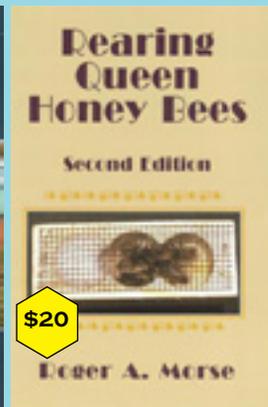
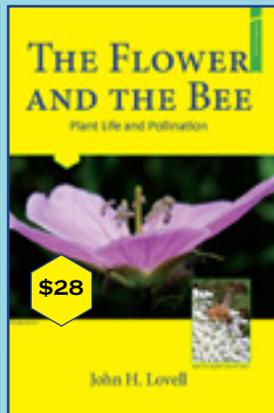
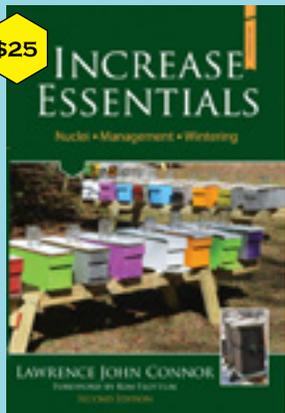
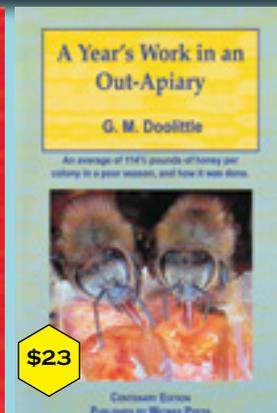
Region 1 – about 134,000 colo-

REPORTING REGIONS								SUMMARY			History	
	1	2	3	4	5	6	7	Range	Avg.	\$/lb	Last Month	Last Year
EXTRACTED HONEY PRICES SOLD BULK TO PACKERS OR PROCESSORS												
55 Gal. Drum, Light	2.10	1.99	2.34	2.30	2.26	2.15	2.38	1.80-2.91	2.23	2.23	2.21	2.21
55 Gal. Drum, Ambr	1.95	1.97	2.15	2.39	2.22	2.02	2.45	1.70-2.91	2.14	2.14	2.31	2.12
60# Light (retail)	218.90	177.50	189.17	185.22	171.00	183.75	260.83	96.00-300.00	204.42	3.41	203.23	191.38
60# Amber (retail)	213.61	175.00	192.00	180.86	197.86	176.80	277.00	84.00-300.00	203.73	3.40	201.50	192.67
WHOLESALE PRICES SOLD TO STORES OR DISTRIBUTORS IN CASE LOTS												
1/2# 24/case	91.53	74.60	78.00	73.25	51.84	103.65	110.00	48.00-126.00	85.86	7.16	80.33	77.04
1# 24/case	131.34	107.07	111.04	106.06	127.16	87.00	129.57	45.00-192.00	117.90	4.91	116.47	112.78
2# 12/case	118.60	96.50	96.17	94.13	97.44	89.25	119.33	70.00-163.20	105.80	4.41	106.57	101.25
12.oz. Plas. 24/cs	107.19	85.00	86.87	85.54	74.40	100.00	111.10	64.80-153.60	96.06	5.34	96.81	86.50
5# 6/case	125.92	105.67	104.00	108.20	102.30	97.50	138.00	30.00-204.00	115.86	3.86	122.39	117.58
Quarts 12/case	178.13	132.88	133.12	123.00	145.82	135.30	138.67	105.00-240.00	142.50	3.96	135.74	133.91
Pints 12/case	107.71	89.20	77.38	68.67	111.00	80.40	99.00	54.00-132.00	89.10	4.95	93.13	85.33
RETAIL SHELF PRICES												
1/2#	5.06	4.21	4.17	4.39	3.90	3.61	6.00	1.95-7.75	4.53	9.06	4.27	3.99
12 oz. Plastic	6.29	4.74	5.09	4.52	5.30	5.69	7.05	3.00-8.99	5.49	7.33	5.46	5.11
1# Glass/Plastic	7.47	6.62	7.20	5.73	6.52	6.59	9.50	3.00-11.99	7.09	7.09	6.72	6.53
2# Glass/Plastic	13.22	10.66	11.46	10.28	10.79	10.80	17.67	6.00-21.00	12.11	6.05	11.58	10.69
Pint	11.46	8.18	11.13	9.23	8.90	11.20	12.10	4.00-41.00	10.23	6.82	10.14	9.17
Quart	17.40	14.67	13.91	15.43	15.78	17.35	18.05	8.00-35.00	15.73	5.24	15.83	14.50
5# Glass/Plastic	27.84	24.60	26.50	20.68	21.52	25.75	30.00	8.00-40.00	25.35	5.07	25.51	24.46
1# Cream	9.45	7.87	6.57	6.87	10.16	8.16	9.50	5.00-16.00	8.37	8.37	8.63	7.85
1# Cut Comb	10.88	9.17	7.70	9.83	12.00	4.50	17.00	4.50-25.00	10.41	10.41	10.61	9.42
Ross Round	8.67	6.75	8.00	9.65	8.85	10.50	8.85	6.00-12.00	8.69	11.59	9.45	8.04
Wholesale Wax (Lt)	7.84	5.19	4.79	6.43	6.00	5.75	5.00	3.00-15.00	6.21	-	5.88	5.78
Wholesale Wax (Dk)	7.16	4.88	5.00	5.94	6.07	3.88	5.00	2.80-10.00	5.73	-	5.51	5.06
Pollination Fee/Col.	94.70	62.00	48.00	72.50	80.00	93.00	117.50	30.00-185.00	78.39	-	83.99	79.91



WICWAS QUALITY BEE BOOKS

Prices include postage within the USA. Request quote for international orders.



ON LINE PAYPAL STORE:
WWW.WICWAS.COM

MAIL ORDERS:
WICWAS PRESS, 1620 MILLER RD,
KALAMAZOO, MI 49001





INNER COVER

What do you think of that hat? I got it at the Mother Earth Fair in Asheville this Spring.

It's made in South Carolina by North Star Leather. All brushed leather, like suede, but thick, with that neat adjustable braided band around the base of the crown with unbraided stringers hanging off the back. Inside, there's a sweatband but no liner. It's not an exact size, other than Large (which means a circumference of 22-5/8" to 23", and includes both the 7-1/4 to 7-3/8 actual hat sizes, but the outside band is adjustable so there's a way to make it fit just so. These folks are at the Asheville

and 7 Springs Fairs for sure, but I don't recall seeing them at the Oregon or Wisconsin fair, but they might have been.

This kind of hat is heavy, actually. Heavier than you think, and I probably wouldn't wear it for a long period of time. That it fits snug, but not too snug and is heavy, a windy day isn't an issue – at least yet. It's sort of a goin' to church hat (though I don't do that that often), or a kind of formal outdoorsy finishing touch when heading over to friends for the evening. It's not so tall I can't wear it in the car, but it's warm enough that I wouldn't want to.

If you're not used to wearing a hat with a brim, and I'm not, you'll notice what happens to sound right away. When someone talks to you it's louder as the all-around brim sort of gathers the sound waves in and holds them there. My hearing isn't what it used to be, so this is definitely an advantage, especially when outside.

You may have noticed that a baseball style cap is my normal head warmer. The bill does just fine for shade, and depending on the material on top – mesh or solid, or very solid – it can be cool, warm or very warm. With my bald head a solid sun screen is good when it's hot, and still good when it's cold. Over the years I've managed to collect a fair number of them – that most but not all having something to do with bees should come as no surprise.

A baseball cap is the perfect piece of beekeeping equipment, too, if you wear a suit or jacket with a zip on hood. The bill keeps the veil from touching your face as you move around, making sure bees don't get a chance to reach you through the mesh. This is where I always use a hat with mesh panels for the crown so I don't get sweaty.

Baseball caps have changed over the years. I have some from long ago.. decades – that were made so that the front of the hat, or crown, just above the bill, stood up more, was taller than those today, which tend to fit the contour of your head. As a result any logo or design put there isn't nearly as visible as they used to be, and are best seen by people considerably taller than you are. But, that's what folks use, so that's what I have – hundreds of them.

The one thing I don't like about baseball hats is the button on the top. Bang your head on something and hit the button and you have a problem. It hurts like heck, and if there isn't a cushion of hair it really hurts. There's no meat to absorb the bump – it isn't much different than getting stung on the scalp – and it's a real pain – a real, real pain.

The other hats I wear are Winter friends. I have several Ivy League style. You know, those that are essentially flat, with the top sloping right to and covering the short brim. These are fancy – wool, lined, very, very chic. They are warm, too, though certainly don't do anything for your ears, so there's

a limit to when you can wear them. They are sometimes called flat hats – because they are I guess. And of course the old standby – my stocking caps. I have a handful of these, some I've had for years and years. They were the uniform of the day growing up in Wisconsin, and still fill every Winter need. My most recent purchase was one made of alpaca wool, with ear flaps and strings to decorate, or tie under your chin. It, too is very chic, and very, very warm. I got that at the PA Mother Earth News Fair last year.

So, why all this stuff about hats? I realize I got off on a tangent here, but it started when I was talking about that hat in the picture and I needed to know the parts so I could describe them – crown, band, brim – like that. Well the hat came from a Mother Earth News Fair, which is where I was going, and which I have returned to. A main attraction at these fairs for me is the many book sellers, and of course Mother's book store. All told, there's probably a couple thousand titles for sale during the fair. Quartous, the fine folks who work with my books have a stand, Chelsea Green and others have most of their titles on display and for sale. Even WicWas Press has been coming with all their bee books in tow. I'm still a hard copy book person at heart, and though I know digital books are popular, I still, like many, like the feel of the weight of a book in my hands, on my lap, and book marks all over the place so I can refer back to what I wanted to remember. An electronic thing-a-ma-jig just isn't the same.

All Natural.

Well, at the last Fair I was at I stumbled across two brand new books that caught my attention, and, since I'm well enough known by many publishers because we routinely review their books, they gave me review copies right there. The reviews are in the New Products section beginning on page 15 or so.

One on Invasive Species caught my eye because beekeepers rely on many invasive species as honey crops. And then there's the irony of the whole concept – beekeepers, and their honey bees are also invasive species, making honey off other invasive species. I've always known that, but I wanted to see what this author had to say. At first glance it seemed he wasn't immediately advocating the total annihilation of every non-native plant and animal, and that seemed appealing right off. His concept was pretty simple, really. The energy, destruction and poison expended in trying to rid, and failing to rid our lands of those plants we consider invasive seemed, to him anyway, counter-productive and wasteful. He was quick to point out that we are also biased on what we deem destructive – is 90 million acres of invasive corn less destructive than a few thousand acres, in non-monoculture environments, of purple loosestrife? Habitat destruction and land use and management changes, along with ongoing climate change will continue to favor invasive species growth as what we have now is going to change in favor of what these new neighbors need and want to grow.

Rather, he suggests, incorporate invasive species into the existing ecosystems and use their beneficial attributes to our advantage. Use all that's there he says, rather than bulldozers, herbicides and chainsaws. Stopping the destruction of what is, making use of what is, and saving energy and resources in the process seems a good choice. And, he points out, these are the precepts of a philosophy called permaculture: care for the planet, care for the people, return the surplus.

This word isn't entirely new to me. We actually have a magazine from the UK that advertises with us called Permaculture. It's new to us, and I have looked at the couple of issues that we have. It seemed a lot like Mother Earth News at first glance.

Organic gardening, rainwater diversion, mulches and the like. But the assumption behind the practices in this magazine were based on that philosophy, which they assumed, I guess, I already knew. I'm going to have to take a second look.

The second book has a great title – *Fire Your Landscaper*. It's about a fellow who was in the right place at the right time, and went from mowing lawns to a \$5 million dollar landscape business in only eight years. But his business was killing him. Maintaining the status quo in landscape designs that wouldn't last because they weren't meant to be. Local culture, home owner associations and local laws that forbid anything but grass in the front lawn, so adding fertilizer by the ton so lawns grew faster and faster and needed more and more mowing, herbicides to get rid of the very last dandelion – there had to be something better. So he sold the business and eventually found a better way. What he found was – permaculture. For him, a better way.

He lays out a lot of guidelines on better landscapes, gardens and lawns, and begins again with the premise of care of the planet, care of the people, and return the surplus.

Well, that was Mother Earth last time. I hope I'm never too old, or stubborn to learn something new. I know that this philosophy isn't new, and I know it doesn't have all of the answers, but it is interesting, and there is something there to grab ahold of and learn from.

And for those of you who already know about this and are thinking it's about time that guy woke up and heard the music – OK, I have. Now, let me tell you about Jim Tew's Tilly Hat.

•

Upcoming events. Let me tell you about what's coming in our December's INTERVIEW ISSUE. Our regulars have been able to talk to a wide variety of people this year I know you'll find worth listening to. Ann Harman spends some time with Tom Seeley, from Cornell, and Jennifer Berry has her boss, Keith Delaplaine talking about the work they do in Georgia. Jessica Lorque talks to Don Hopkins, the State Apiary Inspector from North Caro-

lina and Ross Conrad spends time at the Mraz operation, a family of commercial beekeepers in Vermont. Kathy Summers, here in our office, talks to Brenda Tharp-Bray, a very familiar face at almost every bee meeting you've been to in the last 20+ years representing Mann Lake. Doug Tallamy, from the University of Delaware, author of several books on the value of native plants to pollinators spends some time with me discussing why we should all be growing more native plants, and far, far less grass. Mea McNeil has spent months chasing all the players in the President's Pollinator Protection Plan, seeing if they are doing what's supposed to be done, who's doing it, and is it helping. Mea's is a very big production, with every government agency tied into it at some level, and a lot of other players helping out. Find out what your government is doing and how well it's working to help pollinators. Finally, Toni Burnham scored an interview with the co-inventor of the Flow Hive. Find out more about this newest beekeeping gadget.

Finally, the 2016 Calendar Photo contest is closed, and our crew is busy sorting through the hundreds and hundreds of photos we've received vying for a place on this coveted calendar that comes with our January issue, so be sure to look for it then. There are some show stoppers this year. Stay tuned.

In the meantime, it's Thanksgiving. Stop for a moment and look around you. It's not all perfect, but look carefully – lots of it is pretty close. Thanks for that.

P.S.

If you haven't already, take a look at the results of the BIP survey published here <https://beeinformed.org/results/the-bee-informed-partnership-national-management-survey-2014-2015/>.

There's an amazing amount of information presented there, and their operation continues to expand. But, like all good things, they are still looking for funding. Consider a donation from your club for this good cause this year.





Visit our new website
www.hummerbee.com
to learn about all of our
other available models:

Rough Terrain Forklifts

TURBO XL XT_{2WD}

The next generation
of Hummerbee...

XRT

This is it. The ultimate beekeeping and orchard forklift. This is the next step in the evolution of the Hummerbee. The XRT is smoother, faster, more robust, and more luxurious than any other forklift on the market today.

Extreme power, advanced articulating joint design, electronic, touch-of-a-finger joystick mast controls, leather-padded operator station, and the highest lift capacity in its class are just a few of what make this the ultimate Hummerbee.

Call 800-943-8677 to order yours.
Production is currently limited.



A & O FORKLIFT

www.hummerbee.com

Call 800-943-8677 to order

It's Summers Time –

As I write this it is still October, but the November issue – really! I don't know about at your house, but the Summer went pretty fast here. Once again we were too busy or maybe busy enough. What is too busy, if you're having fun? And we had fun. It was a bumpy year, but most of it was still enjoyable. So, next year we'll try again with the garden and the perennial flower bed out front and the beehive stand that is kind of tipping over and maybe making a bigger chicken/duck coop – because we are both really having fun with the ducks and the chickens.

Fall is sort of odd this year. I'm sure it's partly the Summer we had – very wet in June, very dry and hot in July and August. But the leaves have not really started turning colors in a dramatic way. You see a little orange and brown, but not much. Medina has an annual Fall Foliage tour around the county. The hope is that the foliage is beautiful as you drive along country roads stopping at different locations along the way. The colors might be a little disappointing this year. It's coming up this weekend.

We'll be in Cleveland at Case Western University taking part in a Pollinator Day. Kim is giving a talk. Toni Burnham, one of our regular authors, is coming in from DC to give a talk and several others will be talking about pollinators and pollination all day.

We're holding steady at 18 chickens and two ducks. We're finally getting a good number of eggs again – on average about nine a day. Kim is very happy and we got a few to sell and some to give away. Life is good. There's nothing like those fresh eggs.

The female duck has started to recognize the car when we pull in the driveway and she starts quacking like crazy when she hears us. She is extremely vocal and so cute.

We're reading up and trying to figure out exactly what to do with the ducks for the Winter. The predictions are for another very hard, long Winter here in Northeast Ohio, just like the last two.

Kim finished up his Mother Earth News tour of 2015 at 7 Springs, Pennsylvania. I love that place. It's nice because you park the car on Friday and don't get back into it until Sunday afternoon. I like being able to stay right there at the hotel where the Fair is being held. It just



Root Candles Pollinator Prairie in October.

Mother
Earth
News Fair
7 Springs,
PA



makes life simple. They had great weather and it seemed like a great turnout. We came home with our usual stack of new books and lots of other goodies. That's the nice thing about 7 Springs also – we drive there so we can buy a lot more stuff!

We found out they are adding a sixth location for the 2016 schedule. It's in Belton, Texas. It's on Hwy 35 between Waco and Austin, in February. You can find the exact dates on the add in this issue.

The *Bee Culture* staff is kind of looking forward to 2016. This year has been a rough one for our department – probably the roughest one I've gone through. There was the software/subscription problem at the beginning of the year that still haunts us every once in a while. We have some turnover – two people gone and two new people added. Jean is our new advertising sales person and has already talked to a few of you. She's a delight and is very rapidly getting a handle on the advertising situation. Amanda, who has been with us a while now, continues to master our web page, social media and subscription program. Hopefully, you've noticed that our Facebook page is actually getting some attention now and looking better all the time. Joy has just joined us and for the first time ever there is another person in our department who does what I do – Layout and Design. So I'm excited about that because there's only one of me and we've got lots of projects. Her main focus at first will be our new quarterly magazine that will be sold on newsstands starting in December. Watch for *Beekeeping, Your First Three Years*. We'll have more information for you in the December issue.

We're looking forward to 2016. *Bee Culture* has lots of plans for next year. We've already decided on the topic for our Annual October Event. See page 35 for a preview and watch these pages for more information. We're also expanding our Root Pollinator Garden project in 2016. Actually we'll be doing some Fall plantings. We have three plots going right now and will expand to five or six for next year. We're doing this in conjunction with the Pollinator Protection group, and Medina County Master Gardeners/OSU Extension. There's a lot going on at *Bee Culture* and Root Candles.

I hope you all have a Happy Thanksgiving with family and friends. Thanksgiving is a favorite of mine because it's mostly about being with the people you love – not all the gifts and buying. A good meal with good people. If you are a Black Friday shopper enjoy and be safe.

Charly Summers

Bees Love 
Global Patties

You will too



Keep your hives strong and healthy with less effort and low cost
Reduce winter loss and see faster spring build-up
Help your bees thrive despite drought and stress from mites and disease

Two North American Factory Locations

Plus depots across the U.S. and Canada to Serve You Best

BAY 2 - 8 East Lake Way NE, Airdrie Alberta T4A 2J3

Phone: 1-403-948-6084 - Fax: 1-403-948-6901

150 Parkmont West, Butte Montana 59701

Ph: 1-406-494-4488 - Fax: 1-406-494-3511

Call Us Toll Free in North America at 1-866-948-6084

We make protein and pollen patties to your specifications
using only fresh, high quality, proven ingredients. Satisfaction guaranteed.

Be sure to visit our website

www.globalpatties.com

For our locations, news, ideas, specials, and much more...

Your bees will thank you



A Closer LOOK

TARSAL GLANDS/ FOOTPRINT PHEROMONE

Clarence Collison

Walk a mile in my footsteps.

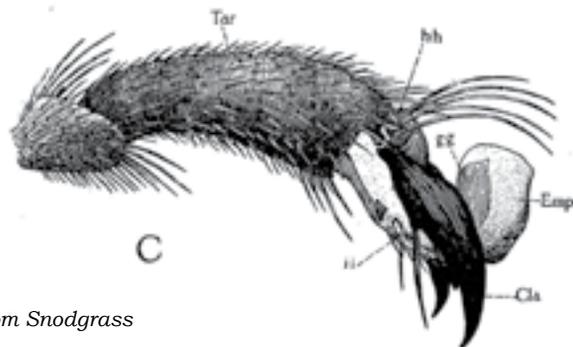
When honey bees walk across a surface, their feet often deposit an attractive, oily, colorless secretion that has a low volatility. This secretion has been shown to affect the behavior of other workers, thus is considered to be a pheromone. This chemical has been termed “footprint pheromone” or “trail pheromone.” The secretion is believed to originate from the tarsal (Arnhart) glands. These glands are located in the 5th tarsomere of the fore-, mid- and hind-legs of adult honey bee queens, workers and drones. Their structural features are not caste or sex specific. The tarsal glands have the shape of a flattened sac within each of the last tarsal segments of each leg (Lensky et al. 1985). Each gland consists of a unicellular layer which surrounds and secretes into a sac-like cavity which forms the reservoir of the gland. The unicellular layer of epithelial cells contain an abundance of cellular organelles consistent with a secretory activity (Goodman 2003). The chemical is deposited by the terminal arolium between the tarsal claws as the bee walks about. In addition to the feet, it is deposited by the tip of the abdomen, which often trails over the surface as the bee walks (Caron and Connor 2013).

The cells of the tarsal gland differ from those of the Nasonov gland in that they do not have ducts to transport the secretory material either to the reservoir or to the exterior. The gland cells are bounded by cuticle and to enter the reservoir the secretion must cross this barrier (Goodman 2003). This type of gland cell is classified as class 1 (Noirot et al. 1974). It is not clear how the secretory material crosses the cuticle – does it diffuse through the cuticle or make use of a pore canal system? The means by which the secretion exits the tarsal gland cells and gets to the reservoir remains to be determined.

Honey bees show a variety of “footprint chemicals” which have been characterized by chromatographic techniques. Included are alkanes, alkenes, alcohols, organic acids, ethers, esters and aldehydes. Tarsal glands secrete 12 compounds specific to queens, 11 specific for workers and one specific to drones (Lensky et al. 1987). A further difference lies in their rate

of secretion, the tarsal gland of the queen secreting at a much higher rate than that of the worker and the drone. The secretion of six-month-old queens is greater than two-year-old queens; the rate of secretion of the workers’ glands is 10-15 times less than that of the queen’s (Lensky et al. 1984).

Secretions with very different functions are deposited by the tarsi of both queens and workers (Blum 1992). In the worker, the pheromone appears to belong to those chemicals that assist the bee in orientation. Workers deposit a persistent trail pheromone at their hive entrance and the attractiveness of this secretion increases with the number of workers depositing it (Butler et al. 1970). It appears that bees also mark forage sites with the footprint pheromone, thus increasing their attractiveness to other foragers (Ferguson and Free 1979). Thus flowers and sites containing artificial



From Snodgrass

Lateral view of end of last tarsal joint of first foot (Tar) showing empodium in ordinary position when not in use.



The queen leaves her special mark.

pheromone lures are more attractive to other workers than similar resources that have not been marked with footprint pheromone. There is also some suggestion that footprint pheromone may help short-term marking of individual flowers whose nectar source has been depleted – helping to avoid unproductive visits (Free 1987).

Butler et al. (1969) showed that crawling workers, apparently involuntarily, deposit a 'footprint substance' that attracts other workers and stimulates them to enter the hive. Homecoming honey bees are also attracted by an odor in the hive atmosphere which may be part of the 'footprint substance.' This footprint pheromone, which is certainly perceived olfactorily and possibly also chemotactically, is persistent but probably not colony specific. Glass entrance tunnels that have been marked with this trail pheromone are much preferred by homecoming bees to clean glass entrance tunnels. The attractiveness of an entrance tunnel increased with the number of workers that had previously used it up to about 400 workers, thereafter its attractiveness failed to increase further. The trail pheromone of workers from another colony was also attractive but slightly less so than that of workers from a bee's own colony.

The floor and inside walls of the hive or nest and the combs themselves are also probably marked with trail pheromone. The accumulation of trail pheromone on comb may partially explain why old comb is more attractive than new (Free 1987). Butler (1967) found that bees he had trained to forage in a darkened arena produced an odor trail between their hive and the dish of sugar syrup.

It is well established that a glass dish on which bees have been foraging for sucrose syrup is more attractive to potential foragers than a clean dish, probably because of an attractive trail pheromone the foraging bees have left behind. Experiments that have demonstrated this involved training bees to collect sugar syrup from tubes or dishes placed on a circular table. The tubes or dishes with syrup were replaced by empty ones, provided with different odors and placed equidistant from the table center; the number of bees that landed on or touched each tube or dish was compared. The table was rotated continuously so the bees did not become conditioned to any particular position (Ribbands 1954; Butler et al. 1969; Ferguson and Free 1979).

Bees visiting a site, mark it with an attractive pheromone irrespective of whether they have foraged successfully there or not (Free 1987). Ribbands (1954) showed that it was only necessary for a bee to land briefly on a particular empty tube for it to prefer that tube subsequently, Free (1970) found that would-be foragers were attracted to the odor bees had left on a glass sheet covering model flowers from which they could not obtain food and Ferguson and Free (1979) demonstrated that dishes on which bees had landed and had not foraged became attractive to others.

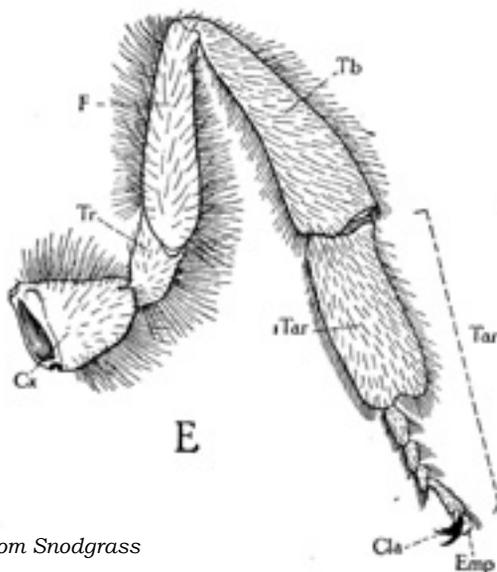
It seems that foraging bees may also have a preference for trail odor



Footprint pheromone is everywhere in a hive.

deposited by bees of their own colony. Bees from two colonies were trained to two separate but adjacent dishes of dilute sucrose syrup; the dilute syrup in each dish was then replaced by concentrated syrup so that dancing and recruiting were encouraged. Newcomers that arrived were preferentially attracted to the dish visited by their nestmates (Kalmus and Ribbands 1952) and so deposition of a trail pheromone at a source of forage favors survival of their own colony.

It has been suggested that the tarsal gland secretion of the queen plays a part in inhibiting the construction of queen cups and hence in inhibiting queen rearing and swarming. Experiments were conducted to determine the role of population density of queen-right colonies and that of the queen bee pheromonal secretions, on the induction and inhibition of swarming queen cup construction during swarming and non-swarming seasons. Construction of queen cups was induced experimentally in overcrowded queenright colonies, during Winter, which is a non-swarming season. This construction was induced by a high population density of workers: above a threshold of 2.3 workers/ml; there was a relationship between the number of cups constructed and the colony density. During the swarming season a relationship was established between the free volume of a hive (population density) and the number of queen cups constructed: 1.5 cups in a colony that occupied 80,960 ml, compared with 77 cups in a colony hived within a volume of 20,240 ml. Observations of the queen's



Left hind leg of queen, anterior or outer view.

From Snodgrass

movements upon combs in colonies of high and normal population densities showed that in an overcrowded colony the queen bee was almost absent from the bottom edges of the comb, where queen swarming cups and cells are constructed. The glandular oily secretion from the queen's tarsal glands is deposited by the foot-pads upon the comb surface. The rate of secretion by the queen's tarsal glands was about 13 times higher than those of the workers. A bioassay based on increasing worker population densities for testing the inhibitory effects of the queen's glandular extracts on the construction of queen cups was developed (Lensky and Slabezki 1981).

The application of tarsal and mandibular glands' secretion to comb bottom edges in overcrowded colonies (bioassay) caused the inhibition of queen cup construction. None of these two secretions affected construction of these cups when applied separately. They believe that due to colony overcrowding the queen bee is unable to deposit the non-volatile secretions from tarsal and mandibular glands along the comb edges and that the deficiency of the foot-print and mandibular pheromone triggers the construction of swarming cups along the non-inhibited areas (Lensky and Slabezki 1981).

Not all researchers agree that the tarsal glands are the site of production of the footprint pheromone (Winston 1987). Ferguson and Free (1979) reported that the odors of the head, thorax and abdomen are very active in inducing landing by workers searching for food. Thus, it is possible that this pheromone, while it is deposited by the feet, originates elsewhere on the body (Butler et al. 1969).

The footprint pheromone is capable of inducing disoriented workers to expose their Nasonov glands (Ferguson and Free 1981). Thus, this pheromone can work in concert with the Nasonov scent to aid workers which have become temporarily disoriented in the vicinity of the hive entrance. The attractiveness of synthetic Nasonov pheromone on the recruitment of foragers to glass dishes of sugar water has been compared with that of footprint pheromone (Williams et al. 1981). Dishes marked with footprint pheromone were visited more than clean dishes, while dishes marked with either footprint pheromone or synthetic Nasonov pheromone were equally attractive. However, dishes marked with both pheromones received a greater frequency of visits than any others. These experiments show that the footprint pheromone enhances the attractiveness of the Nasonov pheromone to foragers trained to visit a particular site for food. **BC**

References

- Blum, M.S. 1992. *Honey bee pheromones*. In: Graham, J.M. (ed). *The Hive And The Honey Bee*, Dadant & Sons, Hamilton, IL, pp. 373-394.
- Butler, C.G. 1967. *Insect pheromones*. Biol. Res. 42: 42-87.
- Butler, C.G., D. J. C. Fletcher and D. Watler 1969. *Nest-entrance marking with pheromones by the honeybee- Apis mellifera L., and by a wasp, Vespula vulgaris L.* Anim. Behav. 17: 142-147.
- Butler, C.G., D.J.C. Fletcher and D. Watler 1970. *Hive entrance finding by honeybee (Apis mellifera) foragers*. Anim. Behav. 18: 78-91.
- Caron, D.M. and L.J. Connor 2013. *Honey Bee Biology And Beekeeping*. Wicwas Press, Kalamazoo, MI, 368 pp.
- Ferguson, A.W. and J.B. Free 1979. *Production of a forage-marking pheromone by the honeybee*. J. Apic. Res. 18: 128-135.
- Ferguson, A.W. and J. B. Free 1981. *Factors determining the release of Nasonov pheromone by honeybees at the nest entrance*. Physiol. Ent. 6: 15-19.
- Free, J.B. 1970. *Effect of flower shapes and nectar guides on the behaviour of foraging honeybees*. Behaviour. 37: 269-285.
- Free, J.B. 1987. *Pheromones of Social Bees*. Comstock Publishing Associates, Ithaca, NY, 218 pp.
- Goodman, L. 2003. *Form and Function in the Honey Bee*. International Bee Research Association, Cardiff, UK, 220 pp.
- Kalmus, H. and C.R. Ribbands 1952. *The origin of the odours by which honeybees distinguish their companions*. Proc. Royal Soc. B. 140: 50-59.
- Lensky, Y. and Y. Slabezki 1981. *The inhibiting effect of the queen bee (Apis mellifera L.) foot-print pheromone on the construction of swarming queen cups*. J. Insect Physiol. 27: 313-323.
- Lensky, Y., P. Cassier, A. Finkel, A. Teeshbee, R. Schlesinger, C. Delorme-Joulie and

M. Levinsohn 1984. *The tarsal gland of the honeybee (Apis mellifera L.) queens, workers and drones, biological effects*. Ann. Sci. Nat. Zool. 6: 167-175.

Lensky, Y., P. Cassier, A. Finkel, C. Delorme-Joulie and M. Levinsohn 1985. *The fine structure of the tarsal glands of the honeybee Apis mellifera L. (Hymenoptera)*. Cell Tissue Res. 240: 153-158.

Lensky, Y., A. Finkel, P. Cassier, A. Teeshbee and R. Schlesinger 1987. *The tarsal glands of honeybee (Apis mellifera L.) queens, workers and drones—chemical characterization of footprint secretions*. Honeybee Sci. 8: 97-102.

Noirot, C., A. Quennedey and R. F. Smith 1974. *Fine structure of insect epidermal glands*. Ann. Rev. Entomol. 19: 61-81.

Ribbands, C.R. 1954. *Communication between honeybees. 1. The response of crop-attached bees to the scent of their crop*. Proc. Royal Entomol. Soc., London. 29: 141-144.

Williams, I.H., J.A. Pickett and A.P. Martin 1981. *Nasonov pheromone of the honey bee Apis mellifera L. (Hymenoptera: Apidae) Part II. Bioassay of the components using foragers*. J. Chem. Ecol. 7: 225-237.

Winston, M.L. 1987. *The Biology Of The Honey Bee*. Harvard University Press, Cambridge, MA, 281 pp.

Clarence Collison is an Emeritus Professor of Entomology and Department Head Emeritus of Entomology and Plant Pathology at Mississippi State University, Mississippi State, MS.



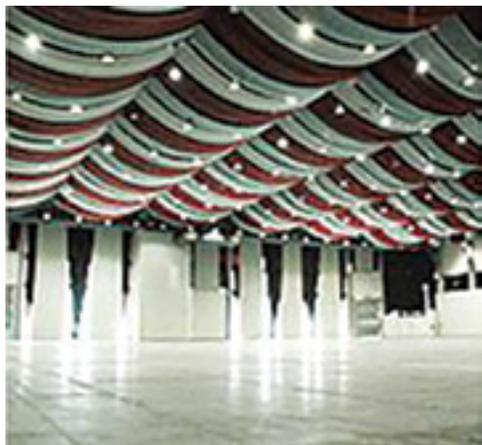
APIMONDIA 2015

Ann Harman

Every two years the world's beekeepers come together to hear presentations about all aspects of bees and beekeeping. This year the 44th Apimondia International Congress was held from 15 through 19 September in Daejeon, Korea, a two and a half hour bus ride from the airport near Seoul. Daejeon is a 'new' city with many light industries but nothing in the way of old, historical interests.

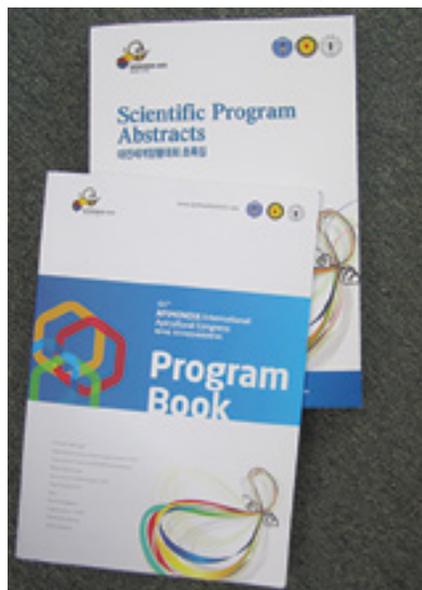
The venue was the Daejeon Conference Center, older buildings than the high white towers of apartment buildings seen across the river. The Ceremonial Hall was a gigantic room with a high ceiling and, unfortunately, dreadful acoustics. The echoes from deep male voices were not as bad as those from higher pitched voices whose words were unintelligible. Another unfortunate aspect of this room was the many colored, rotating, eye-blinding lamps that were used during the entertainment. The Opening and Closing Ceremonies, as well as the Plenary Sessions were held in this room. However the Symposia were in another close-by area. Here the eight smaller rooms were used for concurrent sessions. It only took a minute to walk from one presentation to another.

Registration was swift and efficient. Our nametags carried an



identity card that was put on a screen as we entered the Ceremonial Hall and the Exhibition Center. Attendees received a Program Book with all the necessary information. The separate Scientific Program Abstracts book was a burden to carry around because it was an inch thick and weighed very close to three pounds (yes, I weighed it). Many conferences now are putting the abstracts electronically.

The theme of this Congress was

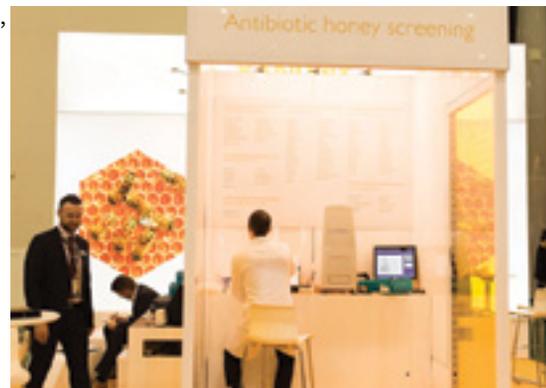


'Bees! Connecting the World.' This year 2900 beekeepers came from 152 countries, the majority from Korea and China. Other countries attending and also in the Exhibition Center (the Trade Show) were quite a few from African countries, some Australians,

but not so many from Europe, USA or Latin America.

The beekeepers were welcomed at the Opening Ceremony with the thunder of drums, all sizes from huge to smaller, beaten with flaming torches. Traditional dances and songs followed, interspersed with short speeches of welcome from all the Korean organizers of the event. Since English was not spoken we had headsets for the translations. The entertainment for the Opening and Closing Ceremonies and for Korea Night (by invitation only) certainly reflected not only Korea but also a connection to the world. We heard delightful music from the opera La Traviata. A troupe of children, dressed in pseudo-Swiss outfits, played the Swiss song Edelweiss on Swiss cow bells. However the Koreans played traditional musical instruments and gave a wonderful black-belt demonstration of kicking wooden boards, held high, to bits.

Since the next Congress, in 2017, will be held in Istanbul, Turkey, a Turkey Night was on the program, but attendance by invitation only. A buffet dinner and a slide show of scenes around Istanbul was shown while we ate and talked. At the Turkey booth in the Exhibition Center beekeepers could find an excellent assortment of tourist information not only about Istanbul but also cultural and historical places.





Gilles Ratia, retiring president.



Mann Lake, Miller Manufacturing of Beetle Jail fame, Piccaro with testing equipment, and the large booth promoting Apimondia in USA in 2019. Its competitor for that year, Canada, also had a large booth.

Both the USA and Canada presented their programs only to the Delegates at a closed session. Then at the Closing Ceremony both countries made a very brief presentation to the general audience. The Delegates voted 78 to 34 at the Closing Ceremony to elect Montreal, Canada as the place for Apimondia 2019.

The World Beekeeping Awards (WBA) is Apimondia's honey show. Classes are similar to a honey show here in USA and also UK. Judging took all day Wednesday and it was then opened to the public on Thursday. Extracted honey had 50 entries. Mead, of various kinds, was another large class, as was the commercial class where the honey was judged on it, and its jar and label presentation as a commercial item. Photography, books, magazines, gadgets, displays, beeswax, lotions, hives were among other classes. The Bee Informed Partnership (BIP) entered its website that took a silver medal (second place). BIP's book of

disease identification won a third place, a bronze medal.

During the Congress an election was held for President of Apimondia. Gilles Ratia had served his six-year term. The new President is Philip McCabe of Ireland. He had been serving as President of the European Commission. Another American, Dr. Jeff Pettis of the USDA Beltsville Bee Lab was elected to serve as the Bee Health President of Scientific Commissions.

Saturday afternoon seemed to arrive suddenly. At the Closing Ceremony Korea thanked us for attending and Turkey, a land on two continents, welcomed us to Istanbul from September 29 through October 4, 2017. **BC**



New president, Philip McCabe.

The Exhibition Center consisted of a tent building and a larger hall. Korea had many booths throughout. You could sample and buy Korean honey and other preparations of hive products. In addition you could visit the booths of the Korean Duck Association and the Korean Milk Marketing Board.

China had several very large booths also. Brazil also had a huge exhibit. From the United States came





January 5-9, 2016

Sawgrass Marriott Golf Resort & Spa

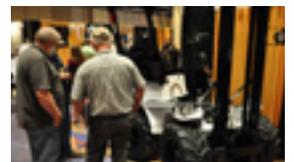
Ponte Vedra Beach (Jacksonville), FL



Join fellow beekeepers in Ponte Vedra Beach (Jacksonville, FL) for the 2016 American Beekeeping Federation (ABF) Conference & Tradeshow featuring:

- Presentations and workshops for all levels of beekeeping led by industry experts
- Keynote presentations by top researchers in the field
- A Tradeshow highlighting products and services in the beekeeping industry
- Opportunities to network with beekeepers of all levels, vendors and industry experts
- 2016 Honey Queen Coronation, Honey Show & Auction and more!

Register today for the conference at www.abfconference.com to secure the lowest registration rate and to take advantage of the special hotel rate of \$125 (plus tax) at the Sawgrass Marriott Golf Resort & Spa.



SAVE UP TO \$100 Register by October 14!

For additional information about the conference, please call 404.760.2875 or visit abfconference.com.



American Beekeeping Federation

Beeyard Thoughts

James E. Tew

Thievery – of any kind anywhere

Bee Water – again and again and again

Speaking on the topic of bees . . . • For The Brand New Beekeeper

• Odds and Ends

Thievery – of any kind anywhere

Robbery is truly hard to consider in just a short discussion – or even a long discussion. What is the thought process behind one (human or otherwise) deciding that they are in a position that justifies taking – through subterfuge and sneak – the belongings and resources of another (again, human or otherwise.)?

Bee Robbers

Last month, in detail, I described the onslaught that a queen cell starter hive experienced when I established that unit within a yard of populous colonies. My intent was to use the small unit to experiment with various aspects of queen cell production for the backyard queen producer. Naturally, I would photograph the process and then you and I would discuss various successes and failures that followed.

Robber bees changed all of that. As I recently said, the robbers were stunningly committed to taking every last iota of stores that I had given the small unit. Ultimately, they destroyed both the colony and the project (for this season).

But in the world of robbery, robber bees are *somewhat* justifiable. In reality, they are robbing, but in the natural world, it could be said that they are simply aggressively foraging during a time when the neighboring hive's resources are the only nectar flow that is available. At all costs, these "robbers" work to provide resources to their own colonies, and they do this at great peril to themselves. Robber bees have a difficult and dangerous job in their hive life. Most do not survive very long.

Beehive Robbers

This human group is in no way noble or pure, but they have surely been around for a long time. Yes, in the bright light of objectivity, the human beehive thief is stealing to provide for his clan in much the

same way as bees are robbing for the support of their clan. I am not presenting a moral lecture at this point. As usual, I am writing far beyond my expertise and training; so I write from a perspective of emotional response and experience. I have just a bit of history being the one who was robbed, so I think I have some empathy with beekeepers who have had their hives taken. In fact, I suspect most of us have some vague sense of what it would feel like to visit a yard – frequently a temporary pollination yard – only to find it gone.

You know the acceptance drill, "Oh!! I must have taken a wrong turn." Or "Have we already moved this yard?" It takes a bit of time to accept the fact that some jerk – even worse – a fellow beekeeper jerk has stolen another beekeeper's hives. Search the web for *stolen beehives*. URL hits on hive thievery are frequent and just as common outside the U.S. At this time, beehives are coveted items that are normally in exposed, remote areas. They seem to be easy targets.

Some hive thieves are savvier. They don't take the hive equipment, but only shake bees into bulk containers (I suppose), and then get out of there. A variation on this theme is to take nucs only. Whether or not the frames are replaced is the thief's call. Again, I suppose that putting frames back into the colony



would possibly delay the beekeeper from realizing that some (many) of the bees had been removed from the hive equipment.

Then there is the fun-loving group of hive thieves – the vandalizing thief. They are not stealing for personal gain, but for personal thrill. Some years ago, I received a call from a small, private airport. The caller stated that I had a beehive on their runway and needed to come for it. That was a 100% puzzling call for I had no hives anywhere near that location. I pushed them to help with my confusion, and they responded that my name was branded on the equipment. Well, this was weird.

Off I did go only to find it *was* my two-story hive on the rarely used runway and as far I could tell, it had been run over – with a vehicle, I suppose – multiple times. The equipment and most of the bees were crushed. The vandal loaded a hive on a warm night filled with free-flying bees. Now that was an odd, gutsy thief who must have been driving someone else's vehicle. To this day, I know nothing of the robber's motives.



My bees are at it again – harassing the neighbors.

Dadant

**Order
Now!**

AP23[®]

Artificial Pollen 23

WINTER PATTIES

WITH **HONEY-B-HEALTHY**

AP23 Winter Patties are a high carbohydrate feed for honeybee colonies light on stores during the winter months. Contains Sugar, AP23, and Honey-B-Healthy.

- Can be used in winter and early spring in place of Candy Boards
- Readily accepted by the bees
- Convenient for all beekeepers

AP23 PATTIES

M0016040PHW

1 ctn - 40 patties



**FEED AP23 FOR
A HEALTHY BEE!**

CHECK YOUR LOCAL BRANCH FOR PRICING.

www.dadant.com

51 S. SECOND STREET, HAMILTON IL 62341 • PHONE (217) 847-3324 • FAX (217) 847-3660 • TOLL FREE 1-888-922-1293
• CHICO, CA (877) 332-3268 • FRESNO, CA (877) 432-3268 • PARIS, TX (877) 632-3268 • SIOUX CITY, IA (877) 732-3268 •
• WATERTOWN, WI (877) 232-3268 • ALBION, MI (877) 932-3268 • WAVERLY, NY (877) 532-3268 •
• CHATHAM, VA (800) 220-8325 • FRANKFORT, KY (888) 932-3268 • HIGH SPRINGS, FL (877) 832-3268 •



The hive was a total loss, but at least they only took one. What should I have done with the remainder of the hives in that yard? Move them or leave them there? I left them, and nothing else ever happened. What a goofy thief.

The true thief

I very recently had an enterprising thief get into my locked motel room (a prominent national chain) and take all my camera equipment – and only that. Everything else was still there. My camera equipment is essentially always near me, both at home and when traveling, because I am constantly taking photos to use in these articles and for other bee education purposes. Consequently, my national brand insurer said that my equipment was both professional and off-site and as such, was not covered by my homeowner policy. At this point, I would love to go into great detail, but both legal and personal sources have admonished me to keep it cool. I will say that I have lost some serious camera equipment.

This type of thief did not take actual hive equipment or bees, but he (I assume it was a “he”) took part of my ability to perform my job. Last month, with a small amount of fanfare I introduced a supplementary program to my articles in which I posted additional photos that could be visited on the web. I suppose I will determine if my smart phone can capture enough to post photos there this month. All I can do is make lemonade with all these lemons.

Bee Water – again and again and again

If you’re not sick of this topic, then I certainly am. I have written about it time and again. This bee-water issue is a lot like the small hive beetle issue. Small hive beetles (SHB) are not an issue for everyone; in fact, they are not an issue for most beekeepers. But if you are the beekeeper with SHBs, they can be a significant pest for which there are precious few control recommendations. The same is true with bee water issues. If you have no neighbors or if there is a pond near your apiary, why bother reading about water issues? For those of us who must talk to our neighbors about our bees, it is truly a pain. Since this water issue has become repetitious, I will keep it brief.

A forager on goldenrod.



This time it was a different neighbor from the others with whom I had interacted. She was agreeable and polite, but insistent that they were my bees. I developed my arguments in preparation for my visit with her. There are now other beekeepers in the neighborhood, and there are some feral bees in the area. How could she be so sure?

It was a tub-type small landscape pond filled with murky water. A spout in the center forced a small stream of water in the air that provided water movement to prevent mosquito growth. And then there were honey bees – hundreds of them – all obviously flying in interstate traffic format right back to my apiary. I had absolutely no defense. Before you ask, I have a kid’s pool filled with clean water and floats 50 yards from my apiary in an open yard. Yet, here they are, flying 150 yards to gather algae-laden water.

My neighbor graciously agreed to clean her small pond at night. She said she knew the bees were in trouble and that she did not want me to move any colonies. I still felt terrible.

For those of us who have recalcitrant bees that just will not stay in the right place, it is frustrating. I could conceivably build my neighbor a screen cover that she could remove when she wants to enjoy her patio. What have you clever beekeepers learned to do that helps keep your bees at your water sources?

Speaking on the topic of bees . . .

A good beekeeping friend, LF, recently told me something that is blatantly obvious, but something that I had never put into a specific

thought. Established, wizened beekeepers are not always the best speakers for brand new, starry-eyed beekeepers. Though I do not consider myself wise, I have become established and immediately realized what LF meant. It appeared to my friend that a successful beekeeper with four to five years experience made the best speaker for very new beekeepers. Established beekeepers assume a lot from the audience that is sometimes not yet there.

While trying to stay on time, while trying not to overload new keepers, and while trying to give a real life experience – all at the same time – I passed around a caged queen with attendants. Of course all were in awe and I proceeded to give an overview of how the queen should be introduced. I got a puzzling question from the floor. How would I introduce only one queen at the time? It took a wee bit of time for me to realize that I had not fully explained the function of the attendants and that they were NOT all queens in the single cage.

LF was given the story of a (very) new beekeeper who bought a queen and expeditiously took her and her attendants home and released them – as per instructions – into a hive body with no bees. His thought was that these few bees and the queen would build a colony. In fact, they died and the new beekeeper wanted another queen to replace the defective one. Actually, he was not horribly wrong. Bumble bees, Yellowjackets and hornets essentially start from a single queen every year. Obviously, honey bees can’t do that.

While I do not intend for this to become a “how to” when talking to new beekeepers, a fear I sometimes

have is that a speaker will go the other way and give entirely too much information. I recently stepped in this trap when giving a presentation on “making hive splits” to somewhat new beekeepers. I tried to present all the possibilities and only ended up confusing the new folks. Now, if I should give that talk again, I would clearly present one technique out of the entire morass of hive-splitting possibilities for the new people to try.

Fundamentally a good speaker for a new group (or any group) should start on time, end on time, stay on topic, allow time for questions, speak clearly and strongly, address questions, and have some props if at all possible. Fight the urge to present all you know on a subject in just one presentation. These suggestions have come to me from many years of reviewing participant evaluations.

For the Brand New Beekeeper

By the time you brand new beekeepers get this, the season will have passed. But for new beekeepers next season, that “stink” in your Autumn beeyard is nectar coming from fall aster and goldenrod. It appears to me that goldenrod is an “iffy” plant much like dandelion. Both plants seem to be somewhat attractive to bees. But in the case of goldenrod, the bees are clearly making a honey crop because of the odor that can literally be smelled 75 yards downwind of the apiary.

I am telling the new people this odor characteristic of goldenrod because of my personal experience. I was a new beekeeper at Auburn University. I was in my first year and had three hives on a nearby farm. Goldenrod came into bloom and upon my visit to the yard, I smelled the odor of what I thought must be American foulbrood (AFB). At that time, I had never smelled either. I contacted my mentor, telling him that I thought I had AFB in all three of my hives. We both panicked. He and I quickly rendezvoused at my apiary where he kindly explained that I was a novice. All these years later, the smell of goldenrod in my apiary is a clear harbinger of Autumn. Time to prepare for Winter. It also means that it is getting very late to treat for *Varroa* and that I should be getting my firewood stacked.

Odds and Ends

It’s not my intent to attempt to teach technical aspects of computerdom in this article. I am self-taught and just a bit dangerous. Even so, I have been using various conventions in my articles and in my presentations, that at times, cause confusion.

I have posted some incidental photos on the web that I have taken with my smart phone for this article. They are not particularly special. I have uploaded them into a software package named SmugMug for which I must pay to use so that you do not see advertisements.

To access these photos, the first thing I provide is the original URL address: <https://onetewbee.smugmug.com/October-2015-Bee-Culture/n-W3FnvF/>

Obviously, if you are not using the electronic version of *Bee Culture*, the above address will be tedious to copy. Not a single error can be made when copying the address, so I use a URL shortener to make it easier to copy. Using this URL shortener, I can use words to make the address easier to read. It looks like this: <http://tinyurl.com/October-2015-Bee-Culture>

For those of you who have a QR code reader (*short for Quick Response Code*) app on your smart phone or other electronic device you are using, you can scan the following code. The scanned QR code will link directly to the URL storing my photos on the web. Using this format, no URL is copied but you must have an app. I use iQR on my computer and Qrafter Pro on my iPhone. I don’t recall having a reason for choosing these two code readers, but you must have one from somewhere for your device to scan. The QR code containing the URL to my photos for this article that is stored on the web is at:



In summary, all I have provided in these three formats are pathways to the same URL. You do not have to use all three formats. Additionally, I am not endorsing any of the software packages to which I have referred. I hope this helps break my code for all of you. **BC**

Dr. James E. Tew, State Specialist, Beekeeping, The Alabama Cooperative Extension System, Auburn University; Emeritus Faculty, The Ohio State University. Tewbee2@gmail.com; <http://www.onetew.com>; [One Tew Bee RSS Feed \(www.onetew.com/feed/\)](http://www.onetew.com/feed/); [@onetewbee](http://www.facebook.com/tewbee2) Youtube: <https://www.youtube.com/user/onetewbee/videos>

CORRECTION

We had a hiccup at the end of Jim’s article in the October issue. For technical reasons we don’t understand two of the url addresses that he included simply went away. See below for the corrected portion of last month’s article. We apologize for any inconvenience this may have caused you.

Posting *Bee Culture* Article Photos

I’m trying to improve the still photos that I post that support my monthly articles. If you are inclined, have a look at: <https://onetewbee.smugmug.com/October-2015-Bee-Culture/n-FM4Hzc/>

Now that’s a lot to hand copy if you are not reading the electronic version of *Bee Culture*. For those readers who must hand copy the address, I have added a QR code and shortened the URL to: <http://tinyurl.com/September-BC>

www.JZsBZs.com

to order
Cups, Cages
& Cell Bars



Bee Culture

The Magazine Of American Beekeeping

*Get Ready For Bee
Culture's Next Event*

A CASE FOR HONEY

A case for honey. When your business is measured in cases of honey, when you begin to call yourself a "Producer-Packer", when honey puts food on the family table, when you know that if you had just another 100 colonies you could quit that damn day job and be your own boss, make your own decisions, fix it yourself, make it yourself, set your own schedule – Then you NEED to be in Medina October 22 and 23, 2016 to listen to and learn from a group of Producer Packers who are successful, who have made the move, who put food on their table every day because of CASES OF HONEY. These are the businesses that count every case, count every colony in every yard, worry about accounts, buyers, shelf space, labels, bottles, dollars, labor, trucks, regulations, and more regulations and family freedom.

If this is you, if this is where you want to be, come listen to and learn from some of the best in the business – long time, well established businesses who know the ropes, know the bees, know the regulations, and know how to sell – A CASE OF HONEY.

Mark Your Calendars Now!

October 22 and 23, 2016

at

Bee Culture's Conference Center
640 West Liberty Street
Medina, Ohio

Watch BeeCulture.com and these pages for program and registration information





9" One-Piece Frames



Snap-In Foundations



Drone Frames



6" One-Piece Frames



Call us today!

(800) 233.2662

Visit us online at

pierco.com

The Indispensable Honey Bee

A Report From 1973

G. Splevin



I started beekeeping in the early 1970s to pollinate my apple orchard. My daughters took a shine to my honey bees more than my sons. My daughters' carry-on the beekeeping tradition: one in the city, one on her small organic farm operating as a CSA (community supported agriculture). Together we attend a variety of beekeeping meetings and conferences. Over the years I have noticed much has remained the same in beekeeping. A friend and I were talking about "beekeeping's past," and the report from 1973 became the topic of conversation. I had noticed the ad in *Bee Culture* for "The Indispensable Honey Bee," and was finally motivated to re-examine history. (The report is available for your own purchase and perusal.) I was curious to refresh my memory and learn our progress across 42 years. Call me less of a "wise guy," and more of a "curious guy."

It was a time of social change. My oldest son just missed getting called up to serve in Vietnam. My daughters were proud of me for encouraging women and minorities to work in engineering (my field since WWII), but dismayed when I stood in the kitchen and "could" not make myself a sandwich! It was a time of change in our household, a change loomed on the horizon for my bees (*Varroa*), but I wondered what really had changed for beekeeping. This report is a snapshot of the beekeeping world in 1973. Thirty speakers presented their concerns and hopes for beekeeping at the offices of the USDA in Beltsville, MD. The report lends itself to be dissected into four categories: beekeepers, USDA, researchers, and others (bee suppliers, Congress, lenders, etc.) I hope to discuss each category and compare it to beekeeping in 2015. I hope my "curious guy" attitude makes you think, makes you examine how you can help beekeeping move forward. After reading the 1973 report we have barely taken one step.

The American Honey Producer's Association promoted "The Indispensable Honey Bee," as the "bee industry's first national conference." The subsequent report is a document of the 30 speakers' presentations. I did not attend that conference, and memory changes with time,

and affected by my own beekeeping experiences across the years. What has changed in 42 years? Forty-two years ago scientists, regulators, beekeepers, legislators, and farmers met to discuss the state of beekeeping, crop pollination, and honey production. The main difference in the 1973 meeting and the Honey Bee Health meetings today is the absence of the pesticide manufacturers at the 1973 meeting. At the 1973 conference, beekeepers and others were not subjected to 15 minute "commercials" about the "greatness" of pesticides. I participate in webinars, listening sessions, and similar conference calls today with various state and national bee and farm groups



Clarence Benson.

The world in 1973 for commercial beekeepers in agriculture was not good.

and regulators. The contrast of pesticide manufacturers' commentary today, which more often than not incites angst, to 1973 when they were not speaking to those they were most affecting, is an extraordinary change. In 1973 much was spoken about the bee kills due to pesticides. However, not a soul was represented to hear the concerns or offer any solutions. Today, pesticide manufacturers are at the conferences, and regularly make presentations to beekeepers. Their message is often lost when they strategize to overwhelm a "listening session" with three, four, and five pesticide industry representatives telling beekeepers their chemicals are not part of the problem. In 1973 no one was subjected to a corporate message lambasting environmentalists, and touting the manufacturer's science as the only good science. DDT had just been banned, so there were no threats of returning to the use of older, more volatile chemicals!

I had just started beekeeping in 1970 to provide for the pollination of my fruit trees. I applied pesticides, in the evenings only, and long after bloom to protect my trees from *Hyphantria cunea* (web worms). I applied pesticides only if I had a pest in the orchard. My Winter bee losses were minimal, caused by Winter – I never lost a hive during the Winter. My Spring swarms were fun for my kids as a cloud of bees would fly across the field to the maple tree. My swarms always went to the same maple tree. I sold my harvest locally, and shared my honey with family, friends, and the bees. The world for me and my bees in 1973 was good. I controlled the pesticide use. Herbicides were not used to kill roadside plantings; tar was sprayed on the gravel roads to control the dust. My bees had plenty of diverse food from the orchard and wooded areas. Most importantly the *Varroa destructor* mite had not arrived in my beeyard.

The 1973 report starts stereotypically, with the speaker making a joke. However, my daughters will not let me ignore the sexism of the era. In hind sight I see how

beekeeping relegated (and to an extent still does) women in beekeeping to the cooking, cosmetic, and secretarial work in beekeeping. 1973 was a time of insulting sexism, and the opening "joke" by the speaker cannot be overlooked, but it reflects the culture of the time.

The world in 1973 for commercial beekeepers in agriculture was not good. The AHPA President introduced the bee industry concerns: "Beekeeping thrives in a pioneer society and withers under the adverse environment that now exists in this country. Agriculture in general has had vast resources in manpower expended in its behalf using tax dollars."¹ The AHPA President explained succinctly the beekeeping environment in 1973, such that I quote the entire page five of the report:

"Beekeepers have, for the most part, not participated in benefits from these expenditures. Quite the contrary! They have frequently suffered tremendously – particularly from the effects of pesticides.

About a quarter of a century ago the chemical industry, interested in profits and spurred on by some of the fantastic results obtained by the use of D.D.T., began to develop and market many new chemicals designated as insecticides. Some of these materials were little different than the nerve gas developed by Germany during World War II. Many of these, or similar not only kill insects but, by any standards, are highly dangerous to man and animals. Various governmental agencies became involved in testing and promoting insecticides. And for all practical purposes many hundreds of individuals in various state and federal agencies were little more than arms of the pesticide industry.

Those of us who protested in any way were ridiculed. We, it was said, were against "progress."

The farmers of the country were flooded with USDA and Extension Service publications as well as radio and TV programs exhorting them to "save their crops" with insecticides. And particularly in intensively cultivated areas, the pesticide salesmen were and still are out in force selling on a commission basis – employing high pressure sales tactics – disregarding need.

During this era, little attention was given to the pollination requirements of various crops. Consequently, in some areas, bee pollinated crops became unprofitable to produce. As an instance: the Salt River Valley – that is the Phoenix area – was once an important melon



Gardner's Apiaries

Spell Bee Co. LLC

510 Patterson Road • Baxley, GA 31513 • Ph: (912) 367-9352 • Fax: (912) 367-7047

Call For Package Availability (pick-up only)

Queen Prices	
1-9	\$20.00
10-24	\$18.00
24-99	\$16.00
100+	\$15.00




Over 100 Years of Experience • All Bees are State Inspected

growing area. The bee colonies in that area have been so decimated the past many years that the melon industry, lacking pollinators, has ceased to exist.

Another instance is the disappearance of the alfalfa seed growing areas in the Arlington and Buckeye Valleys west of Phoenix. In these two small valleys, alfalfa seed production and beekeeping grew up together, one complimented the other and honey and alfalfa seed were important crops for the pioneers who homesteaded in those valleys. Both of those segments of agriculture prospered until it became common practice to apply such materials as Parathion every few days on virtually every crop grown in those areas – including the seed alfalfa crops themselves.

I could cite instance after instance of crops not “saved” by insecticides – but destroyed by them. I have not mentioned the detrimental effects of the use of herbicides and other pesticides. Generally, most pesticides – particularly those used by agriculture are detrimental to beekeeping. However, it is not, as I have indicated, just the beekeepers who have suffered from the massive use of insecticides. The producers of many agricultural crops have also suffered. How much they have suffered due to a lack of pollinators would be more conjecture, as no one has been interested enough to research the subject. From personal experience, I know the loss is very extensive.”²

Beekeepers felt change began in 1968 when Dr. Ned Bayley called a conference to address the “destruction of bees with insecticides.” In 1973 federal and state officials were “actively concerned with serious problems that face beekeeping.”³ The AHPA President spoke of a “crumbled and shaky foundation” of the bee industry, comprising a current but uncertain high price for honey, bee losses due to pesticides, and the “Honey Bee Indemnity Program: which does assist the beekeepers whose colonies are subjected to pesticide damage.”⁴

Beekeepers worried about the future of their industry. They expressed concern young people were not joining the bee industry due to bee losses from pesticides, and the financial difficulty created by these losses. The speaker concludes with expressing concerns of the “virtual decimation [sic] of the coordinated leadership that existed in the Apiculture Research Branch until the re-organization of the Agricultural Research Service last

year.”⁵ He expressed hope ARS would be re-structured to better address the needs of apiculture.

In conclusion, the first speaker spoke of suffering from exhaustion due to the struggles of his beekeeping operation. It is unclear the point trying to be made from “being exhausted” to defining who was “carrying the national workload.” The conclusion of his talk presented some tongue in cheek population stats. For comparison I include the same statistics for today.⁶

	1973	2015
U.S. Population	200M	316.1M
age 65+	72M	40M
age 1-21	75M	93M
Federal employees	27,471,002	2,761,000
Armed Forces	8M	1,551,000
State, city employees	15M	5,286,102
population of hospitals	1,520,000	52,539
*homeless	800,500	600,000
(*in 1973 terms “bums, vagrants and others with a pathological fear of work”)		
incarcerated	208,496	2,427,632
those left to “carry the national workload”	2	169,650,566

The state of beekeeping in 1973 was on a crumbling and shaky foundation, suffering from the high price to produce honey, loss of honey bee pasture, bee losses due to pesticides, and the “Honey Bee Indemnity Program” (which would not be renewed), and the need for greater support from USDA labs to focus on apiculture. Over the next few articles I’d like to compare the 1973 report to beekeeping issues today. We’ll examine the concerns and hopes of the beekeepers, USDA, researchers, and others (bee suppliers, Congress, lenders, etc.) at the 1973 conference. Stay tuned for further discussion on beekeeping in 1973 and 2015 from this “curious guy.”

¹“The Indispensable Honey Bee,” published by The American Honey Producers Association, Inc, 1973; page 4, (reprint available from *Bee Culture*)

²Ibid., page 5

³Ibid., page 6

⁴Ibid., page 6

⁵Ibid., page 7

⁶Ibid., page 7; & 2012 U.S. Census <http://www.census.gov/>

Beekeeper Training DVD

~Great Stocking Stuffer~

Featuring Dr. Jim Tew & John Grafton
2 DVD Set - Over 3 1/2 Hours in 36 Videos.

Hive Management, Queens,
Hive Inspection, Package Bees,
Swarm Removal, and more!

\$24.99 Shipping included!

To order call: 567-703-6722

Or order on-line:

www.OhioStateBeekeepers.com/dvd



Langstroth Honeybee Brood Box



Excellent insulation



bpgrower.com

BEAVER PLASTICS

THE NEW EDITION OF THE HIVE AND THE HONEY BEE

A COMPLETE BEEKEEPING LIBRARY IN ONE BOOK

- 29 CHAPTERS, 44 AUTHORS & 1057 PAGES (LARGER PAGE FORMAT - 7 X 10 INCHES)

- 27% MORE INFORMATION THAN THE 1992 EDITION

- BEAUTIFUL COLOR PHOTOS USED THROUGHOUT THE BOOK

- 660 PHOTOS AND 151 DRAWINGS, GRAPHS & TABLES

- PROFESSIONALLY INDEXED FOR EASY INFORMATION SEARCHES

\$54.50

PLUS SHIPPING

#M00010



**ORDER YOUR
FIRST EDITION NOW
OR TO GIVE
FOR THE HOLIDAYS**



ORDER FROM **DADANT & SONS**
1-888-922-1293 OR
WWW.DADANT.COM/CATALOG

www.dadant.com

51 S. SECOND STREET, HAMILTON IL 62341 • PHONE (217) 847-3324 • FAX (217) 847-3660 • TOLL FREE 1-888-922-1293
• CHICO, CA (877) 332-3268 • FRESNO, CA (877) 432-3268 • PARIS, TX (877) 632-3268 • SIOUX CITY, IA (877) 732-3268 •
• WATERTOWN, WI (877) 232-3268 • ALBION, MI (877) 932-3268 • WAVERLY, NY (877) 532-3268 •
• CHATHAM, VA (800) 220-8325 • FRANKFORT, KY (888) 932-3268 • HIGH SPRINGS, FL (877) 832-3268 •



DRUM PROCESSING (SMALL TIME)

Ed Simon

It finally happened

My business partner Chris Schad and I had anticipated running out of honey and we had made plans for acquiring honey in drums. Now we were faced with the logistics of handling 360 pounds (30 gallon) or 600 pounds (55 gallon) of honey. There was also a good possibility that it would be crystalized. Additionally, to be on the safe side, we filter all the honey we get. Thinking ahead and anticipating some of the problems solved many issues but some were unexpected. In the end everything worked out great.

Hopefully this narration will help you when you decide to purchase larger amounts of honey.

First Set of Drums

The first load of honey we purchased were in 30 gallon drums (360 lbs.). Luckily the seller worked nearby and was able to deliver and unload the drums for us. The first problem came when I had to liquefy the honey. We had just replaced the shingles on our house and I had some eve/gutter heating cord available. Using this I wrapped the drum in the heating tape and waited. It took a week but the honey liquefied. As it liquefied and rose to the top, I kept removing and filtering it. This was a slow and messy process. Something had to change.



First 55 Gallon Drum

The next drum (a 55 gallon drum – 600+ lbs.) was acquired on short notice and we picked it up at the beekeeper's business. He had a skid loader and loaded it on to the back of my truck without any problem.



Problem #1 – anticipated and solved - The beekeeper had the means to load the barrel.

Problem #2 – anticipated and solved - The barrel must be locked down tight and not able to move. Loading straps with tightening ratchets took care of this problem.

Problem #3 – This is not actually a problem but it is something you have to be aware of when buying honey. – The beekeeper wanted cash. We were unknown to the beekeeper. Therefore he required cash for the first purchase. After we established a track record with him, he accepted a check. This made me feel a lot better.

Bringing the barrel back to our barn brought the unloading problem to our attention.

Problem #4 – anticipated and solved - My neighbor has a skid-loader and was used to handling drums. He unloaded the drum and placed it on a 26" x 26" heavy duty dolly that I had made. We could now move the drum wherever we needed.

Problem #5 – anticipated and solved – The honey was crystalized and required liquefying.

We were able to acquire a large drum heater from a farmer that I knew. I was explaining the cost/price of a drum heater to him when he mentioned that he had one we could have. I could not turn down a free drum heater. After rewiring the 50 year old drum heater it worked great. The drum of honey took about two days to completely liquefy.

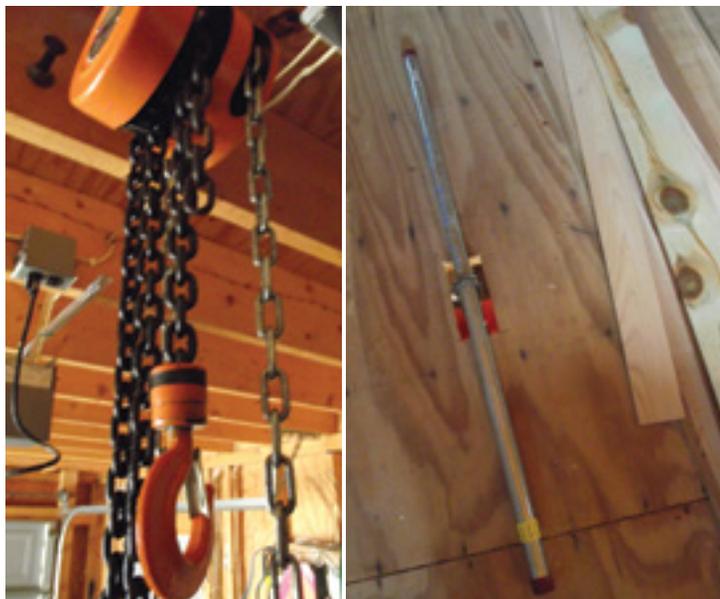
Note: When liquefying the drum, do not tighten the top on the barrel. I worked from the top down and kept

a watch on it. The heater we had was 2,000 watts and worked very fast. If I would have started at the bottom, the honey could have burned or possibly even erupted because the liquid expands and takes more room than the crystalized honey. The crystalized (solid) honey on top could have made an impregnable cap which could have caused a problem.

Decanting and filtering the first 55 gallon drum into four- and five-gallon pails worked but it was sloppy and the process needed to be refined.

Second 55 Gallon Drum

Having a better handle on the problems of handling a 660 pound drum, we were better prepared.



180 degrees apart. They were then joined by a chain which was then attached to the hoist. Sometimes the angels smile and everything works great.

We could now lift the drum off the pickup bed and slowly pull the truck out of the way and lower the drum onto a dolly.

Decanting the Honey

The decanting/filtering setup consisted of a five-gallon pail with a 400 micron filter and a honey gate. Honey is moved to the filter and then the honey gate is used to control the flow of the honey into four- or five-gallon pails for delivery to our bottler.

This worked great but it was extremely messy. The four to five inch gap between the drum and the filter setup caused a lot of stickiness.



Problem #8 – solved – To bridge this gap I built a chute made of ¾" wood covered with aluminum. The sides are turned up to keep the honey in the chute and



Problem #6 – Problem #4 revisited and solved – To unload the drum we acquired a 1,000 lb. chain hoist and suspended it from the loft in the barn. Although I was sure the loft floor could handle a 700 lb. static load, I wasn't about to test my calculations. I cut a hole in the loft floor and added a five foot 1.5" pipe across the floor joists. This distributed the load across four floor joists. I was confident this would work, but I also kept my fingers crossed.

Problem #7 – anticipated and solved – 55 gallon drums do not have handles. We bought some webbing with loops on the ends to use for lifting the barrels. To keep the barrel perpendicular required two slings placed

a couple of screws extend below the chute on the barrel end to keep the chute in place on the barrel. Now I can use a 2 quart mixing bowl with a handle to transfer the honey. By keeping the honey over the chute all the drips ran into the filter.

Unable to get the last of the honey from the barrel I tip it and just let it drain into the filter pail. This process worked great and I was able to transfer 55 gallons of honey to smaller pails in less than three hours.

It takes time and flexibility

When you are at a size where your business is in between small and medium it requires ingenuity and resourcefulness to overcome problems without spending a lot of money.

Notes

Get a copy of Ed Simon's book *Bee Equipment Essentials* with detailed drawings, construction hints and how-to-use instructions for dozens of beekeeping tools and equipment from www.wicwas.com. Ed can be contacted through Ed@TheBeeShed.com. Now available are all of Ed's "Bee Culture" and BBKA magazine articles. They can be accessed through The Bee Shed website at <http://www.thebeeshed.com/publications.html>. **BC**



Build A Drum Dolly

Ed Simon

Build a Drum Dolly (55 gallon)

Moving 660 pounds of honey in a 55 gallon drum is not easy unless you have a forklift or skid loader available to you. When we started purchasing drums of honey, I had to devise a way to manually move them around in the processing area. The saving grace was that the floor in the processing area was smooth cement with no cracks. I ended up developing a dolly capable of moving these barrels.



The requirements that I had to meet were:

- 1) It had to support and move at least 700 pounds.
- 2) It had to be able to be pushed over cement.
- 3) It had to be very rugged.
- 4) It had to be maneuverable.
- 5) It had to be very stable. A runaway drum could cause havoc, broken bones and a horrible mess.
- 6) It had to be cheap. Most of the commercially available dollies were expensive.

The following design and construction fulfilled all of these requirements. For a cost of around \$48.00 each, the cost was more than reasonable (fall 2014 prices). I eventually built three. They are now in use and meet all of the design goals.

Parts (Thickness x Width x Length) – 55 gallon drum dolly

1. 2" x 6" x 26" – platform boards (5)
2. 2" x 4" x 26" – platform boards (3)
3. 2 1/2" x 1/4" - Lag screws (16)
4. 1 1/4" x #8 - Construction screws
5. 5" or 6" Diameter – Heavy duty castors (4)

HEILYSER
OXALIC ACID VAPORIZER

**BUILT BY BEEKEEPERS
FOR BEEKEEPERS**
All parts are replaceable

Fastest electric vaporizer on the market

Available wired or unwired
for your own customization

Multiple units may be used in line

Personal service- We're here to help!

We are thrilled with the results
of the Heilyser in our apiary.

Gentle on bees, deadly to varroa,
easy to use, low cost per hive,
no toxic residues

**BEDILLION
HONEY FARM**

BEDILLIONHoneyFarm.com
724-747-4645

MEDIVET

If Nosema is a problem, Fumagilin-B is the solution

- ▶ **Non-toxic to bees** — 75-fold safety margin
- ▶ **No residue** — when used as directed
- ▶ **Cost effective** — reduces expensive colony replacement

Available from your beekeeping supplies dealer

FUMAGILIN-B
SOLUBLE POWDER OF POLYFUMAGILIN
SOLUBLE DE FUMAGILIN
DICLOHEXYLAMUCYCLAMINE
For Veterinary Use Only
Usage vétérinaire seulement
MEDIVET
Pharmaceuticals Ltd.

Medivet Pharmaceuticals Ltd., High River, Alberta, Canada, T1V 1E6
403.652. 4441 — www.medivet.ca

Construction

This dolly is built like a skateboard for elephants. It is a square, 26" on a side and 3" thick. It has four castors built for rugged use that can swivel in any direction. The castors are placed at the corners and outside the edge of the drum. This provides additional stability for the dolly.



Step 1: Cut five 26" long, 2" x 6" pieces of wood (part #1) for the base.

Step 2: Cut three 26" long, 2" x 4" pieces of wood (part #2) for the base.

Step 3: Using four of part #1, construct a square. The easiest way to do this is to lay the boards in a square with overlapping ends. Then using a screw, attach each corner together with one screw in the middle of the square formed at the corners by the overlapping boards. You should now be able to square up the base and add another screw in each corner to hold the base square. Add additional screws once you are satisfied the base is square.

Step 4: Add a third part #1 to the middle of the top of the base. Use enough construction screws to hold it in place.



Step 5: Now fill in the top by screwing two of part #2 into the gaps between the middle and edges formed by parts #1.

Step 6: The top of the base is now complete. Turn the base over and screw in the last part #2. Center it between the edges to add extra support to the top.

Step 7: Double check each joint to make sure all the screws are tight and will hold the base square.



Step 8: Position the base so the bottom is up (3 boards). Then add the castors using the lag screws (part #3). Be sure to leave enough room between the lag screws and the ends or sides of the boards to prevent splitting when the castor wheels hit a rough spot which causes stress on the lag screws.

Step 9: Paint the dolly with the paint you rescued from the recycling center.

Conclusion

You now have a very serviceable heavy duty dolly that should last many, many years.

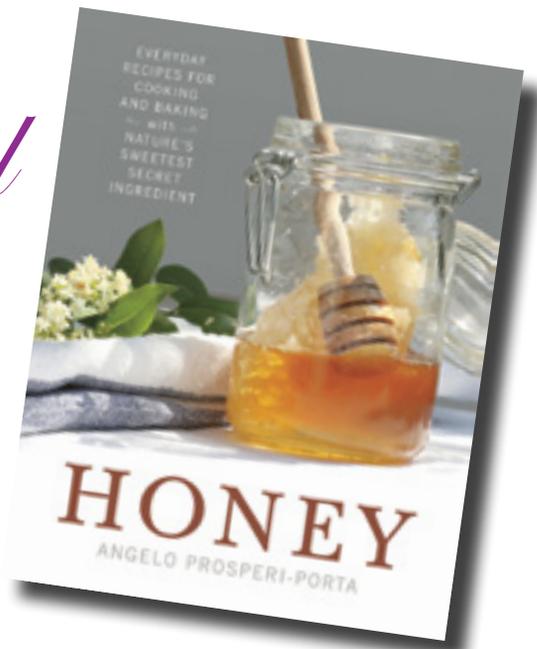
Thoughts

This dolly works great for moving anything bulky or heavy. **BC**

Get a copy of Ed Simon's book *Bee Equipment Essentials* with detailed drawings, construction hints and how-to-use instructions for dozens of beekeeping tools and equipment from www.wicwas.com. Ed can be contacted through Ed@TheBeeShed.com. Now available are all of Ed's Bee Culture magazine articles. They can be accessed at <http://www.thebeeshed.com/publications.html>.

A Holiday Meal With Honey

A couple of months ago we reviewed a new honey cookbook, written by Angelo Prosperi-Porta, who lives in British Columbia, Canada. His training is in Italian cooking, but his environment certainly has an influence on what he prepares. So, we went to him to see what his choices would be for a Grand Holiday Meal, using those recipes in his book, and his experiences in the Pacific Northwest. What follows are six wonderful recipes making up this very unique Holiday meal.



GINGER LEMON SODA

As with many of my recipes, this is a base on which you can build your imagination, allowing you to experiment freely. Not all flavors blend well together, but the lemon and honey are versatile. This base can be stored in the refrigerator until needed, and multiplying the recipe for larger groups does not pose a problem. The addition of lemoncello, that delicious intense lemon liqueur from Italy, elevates this drink to a more sophisticated adult version. Try substituting Prosecco, Italian sparkling wine, or another favorite sparkling wine for the soda. Garnish with mint leaves, fresh raspberries, strawberries or lemon wedges.

- ¼ cup grated fresh ginger
- 1 medium lemon, thinly sliced, plus more for serving
- 1 cup boiling water
- 1/3 cup honey
- Ice cubes
- 3 cups soda water

Place the ginger and lemon slices in a heatproof bowl. Pour the boiling water over the mixture and set aside to steep for 15 minutes.

Strain the mixture through a sieve into a tall pitcher, and stir in the honey. Add ice cubes and top with the soda water. Garnish with extra lemon slices. Serves four.



Angelo Prosperi-Porta

Next month we'll finish this Holiday meal with our veggie-parsnips, the entrée of trout, and a dessert of Yam Mousse. Don't miss it.

SPICED HONEY GLAZED ALMONDS

These spicy little guys make a wonderful prelude to an informal dinner. With the refreshing cleansing flavors of the Ginger Lemon Soda, your guests will ask for more. Try experimenting with some favorite spices. An all-curry version works well as does substituting other nuts for the almonds or making a variety mix using hazelnuts, walnuts, pecans, cashews or other favorites. Resist the urge to rush the drying time in the oven by increasing the heat; this may overcook the spices and produce a slightly bitter taste. For large batches, freeze portions and rewarm as needed.

- ½ cup paprika
- 3 Tbsp cayenne pepper
- 2 tsp ground ginger
- 2 tsp ground cumin
- ½ cup honey
- 2 large egg whites
- 2 tsp liquid smoke
- 1 Tbsp kosher salt
- 2½ lb whole almonds

Preheat the oven to 275°F.

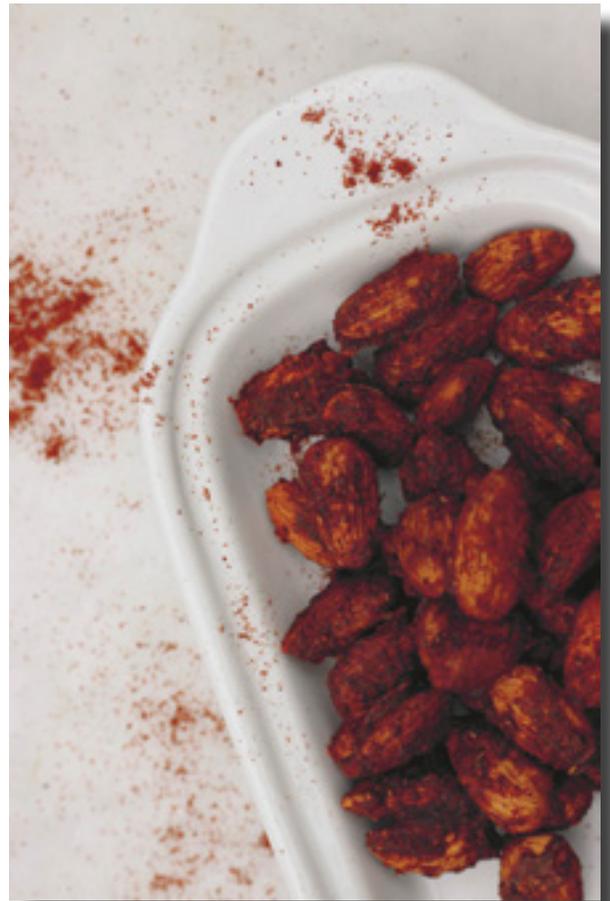
Sift together the paprika, cayenne, ginger, and cumin into a bowl.

In a bowl large enough to hold the almonds, whisk together the honey, egg whites, liquid smoke, and salt until slightly foamy. Add the almonds and toss to coat.

Sprinkle the spice mixture into the bowl. Toss to coat the nuts evenly.

Spread out onto parchment paper-lined baking sheets. Try to separate the nuts to keep them from sticking to each other.

Bake for approximately 20 to 30 minutes or until the coating is dry and crispy. Remove and cool completely on the baking sheets. Store in an airtight container. Makes about 6½ cups.



ROSEMARY, HONEY AND CORNMEAL SCONES

Although usually considered a sweet variety of bread, these scones can also be used in savory applications. A simple way to achieve this is to decrease the amount of honey in the recipe to your liking; I recommend reducing by half for the first try. You may also want to increase the salt slightly, or, after brushing the tops with the extra egg white and water mixture, sprinkle with coarse sea salt before baking.

Another variation would be to use a different herb in the dough, perhaps one that is included in a dish that the scones would be served alongside.

The scones can be made in any shape desired; try them as small rounds served warm. These can then be split open by individual guests and stuffed with cheese, cold cuts, or a spread.

- 1¾ cups all-purpose flour
- 4 tsp baking powder
- ¼ tsp table salt
- 1 cup white or yellow cornmeal, plus more for sprinkling
- 1 Tbsp finely chopped fresh rosemary
- 2 large eggs
- 3 Tbsp honey
- ¾ cup milk
- ¼ cup extra-virgin olive oil

Preheat the oven to 350°F.

Into a bowl, sift together the flour, baking powder, and salt, and then mix in the cornmeal and rosemary. Separate one of the eggs, putting the egg yolk in a bowl, reserving the egg white for later. Add the remaining egg to the egg yolk along with the honey, milk, and olive oil, and whisk together.

Pour this mixture into the dry ingredients, and mix with a wooden spoon until combined. A few spots of unmixed flour are fine. You don't want to overmix or the scones will be tough.

Turn out the dough onto a lightly floured work surface, knead the dough slightly, and divide in half. Shape each piece into a six-inch round, and place onto a nonstick or greased baking sheet. For each round, make deep cuts so you'll have six wedges (but do not separate the wedges).

Whisk the reserved egg white with one tablespoon of water, and brush each round lightly. Sprinkle with a little cornmeal, and bake for 20 to 25 minutes.

Serve warm with butter and honey. Makes 12 three-inch wedges. **BC**

Establishing A *Varroa* Resistant Population In Your Apiary



Roger Hoopingarner

Varroa resistant strains (or stocks) have been selected and established for many years in this country. For example, VSH, Minnesota Hygienic, Purdue University grooming stock, and I am sure others. Yet these strains have been used only sparingly or intermittently by beekeepers. This lack of continued and increasing use of these strains had puzzled me for some time. Especially since I was instrumental in the initial selections for the VSH strain before I retired from MSU. Several times, over the years, I have asked beekeepers if they had used a resistant strain, and if they had why had they not continued to use the stock. The answers varied some, but generally had the theme that after a year, or so, the colony died, maybe from too many mites. And the bees were not particularly good honey producers. Touché. I would now like to answer some of those complaints and give my reasons for many of the failures.

First, let me say that I am still firmly convinced that genetic resistance is the ultimate answer to the *Varroa* problem. South Africa has confirmed that thesis as the whole county developed resistance to *Varroa* in four or five years without any chemical treatments, but that is another story.

When the *Varroa* mites first arrived in countries with *Apis mellifera* colonies they had a feast. On their native host, *Apis cerana*, the mites feed only on drone pupae, thus causing very little damage to the colony. This is primarily because *Apis cerana* workers have too short of a life cycle for the mites to mature. (18 days in *A. cerana* vs. 21 days in *A. mellifera*) I suspect that one of the ultimate solutions for the *A. mellifera* species will be to match the life cycle of *A. cerana*, or certainly shorten it enough to allow the colony to survive. In some ways I am surprised that apparently no bee breeder, or apiculture scientist, has taken this research approach.

However, lets get back to the resistant strains we have and determine why so many of their introductions have failed.

When John Harbo and I were well on our way to releasing the VSH strain we had many discussions as to what kind of stock we wanted to release. Would it be a “super bee” with every good characteristic that beekeepers wanted, or a stock that had resistance genes that the beekeeper would incorporate into their existing stock. We both were of the opinion that the latter was the better approach. First because the development of the supper bee would take many more years of testing and selection, and ultimately because the stock that is good for Michigan or Louisiana would not necessarily be good for Iowa. We thought it would be better to have the resistance genes be incorporated into the beekeepers own stock.

In studies of population genetics it has been shown that if a gene is favored it will eventually be incorporated into the population. The amount that a gene, or genes, is favored, and the breeding genetics of the population, having great effect. Thus, given time the varroa population and the honey bee population will come into a favorable equilibrium. Currently, the varroa population is killing its host, and that is not tenable in the long run. However, we beekeepers do not want to wait for the ultimate selection, and we want to speed up the selection as much as possible.



New From *Bee Culture's* Book Store

X185 Understanding Bee Anatomy

By: Ian Stell

\$45.00

X193 The New Honey Revolution

By: Ron Fessenden MD

\$15.99

X196 Smoking Allowed

By: Paul Jackson

\$9.99

X197 Beeswax Alchemy

By: Petra Ahnert

\$25.00

X198 Beekeepers Problem Solver

By: James E. Tew

\$19.99

X199 Good Garden Bugs

By: Mary M. Gardiner, Ph.D.

\$24.99

X200 Bees

By: Sam Droege

\$25.00

X201 Beekeeping Notebooks

By: Judy Love

Set of 3 - **\$14.99**

X202 Urban Beekeeping

By: Craig Hughes

\$24.95

X203 Chicken Problem Solver

By: Chris Graham

\$19.99

X208 Steve Taber on Beekeeping - BKQ Volume 2

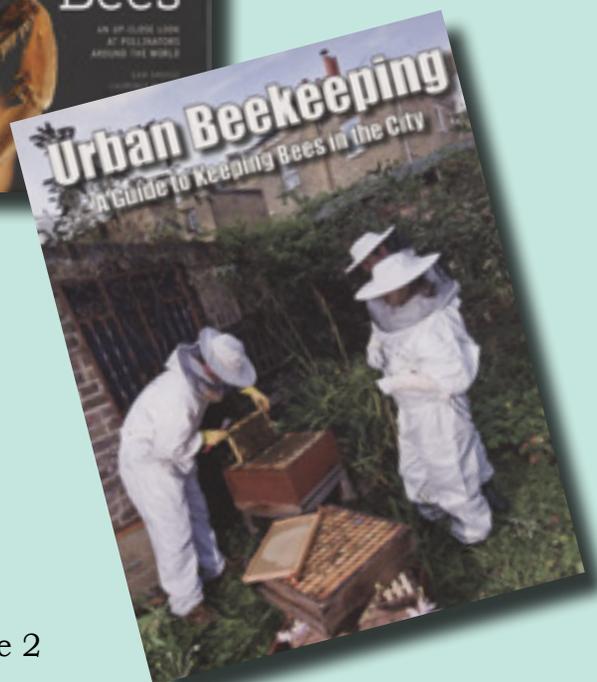
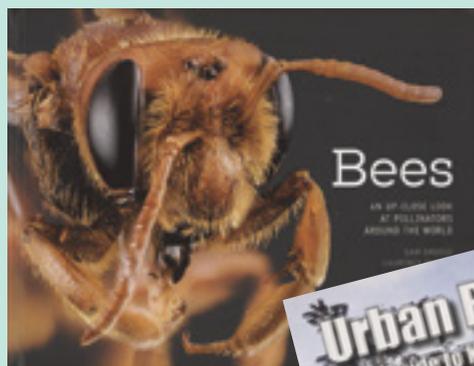
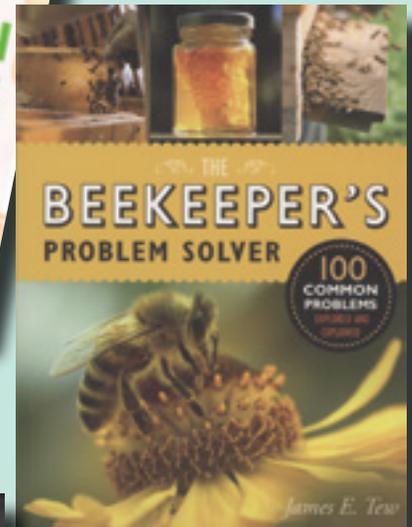
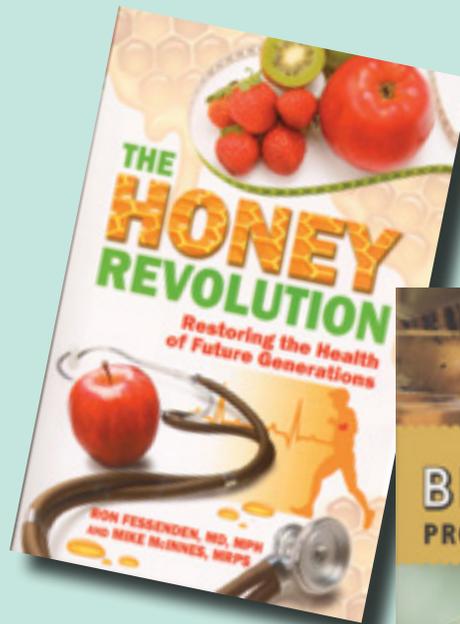
By: Steve Taber

\$18.00

X209 Some Important Operations in Bee Management

By: T. S. K. and M. P. Johansson

\$18.00



**To Purchase
Visit**

www.BeeCulture.com

Then why, if we have the genes for resistance, has it not produced the results we expected? Let us look at the biology of the colony and the mating habits of the honey bee.

When a beekeeper buys a queen with resistance genes (for example VSH) and introduces it to his colony, what happens? If the introduction was successful the queen produces a population of workers that have the resistant traits and the colony will have fewer mites surviving during a breeding cycle. And the queen also produces drones that have the VSH genes, Then in a few months, or a year the queen fails and is superseded. The new queen then mates at the neighborhood drone congregation area (DCA) where drones from **ALL** the colonies in the area are found. If she mates with the average of 12-20 drones, how many of the drones will have the resistance genes? I would guess not many on average. Thus the colony no longer could be considered *Varroa* resistant, at least in the same degree. If the supersedure happens early after the introduction, the beekeeper never truly sees a *Varroa* resistant colony. And few beekeepers mark their queens so they often do not know when a queen has been superseded.

The movement of any favorable gene into a population of bees (apiary) would look much like a series of concentric rings with each subsequent ring being closer to the previous ring. Why do the rings move lesser distance with each subsequent generation, or year, it is because of the increasing acreage of land as the circles move out from the original apiary, and the increased acreage has more colonies, both feral and managed. Thus, for any varroa resistant gene to make an impact in your area (apiary) it may take several breeding cycles.

Some years ago in a discussion with Dr. Marla Spvak (Minnesota Hygienic) she indicated that it took a group of beekeepers six years to "fix" the hygienic genes at their breeding/mating yards such that all virgins mating there would always produce hygienic offspring. Six years! Is it any wonder that beekeepers complained to me that the VSH trait did not persist in their colonies?

What is the solution to the problem? First, the

beekeeper needs to mark *every* resistant queen that he buys so that he knows when a queen has been superseded. He then needs to replace the queen with a new resistant queen until the surrounding population of available drones are all, or nearly all, have the resistant genes.

The question now may be asked, how far out do these concentric rings have to go, such that I don't have to worry that a supersedure queen will be mated with the appropriate drones? That question may be a little hard to answer because the DCA for your apiary may be relatively close to the apiary or may be one to three miles away. Dr. Donald Peer, in 1955, showed that, by using the genetic color marker cordovan, that queens would mate at distances of up to six miles. That is probably the outside limit, but it gives you some idea of the area of saturation that is needed.

How long would it take to saturate the area around your apiary up to the distance of six miles? There are many factors that bear on this question. First, would be how many colonies are located in the area, including feral colonies, and secondly, how often are queens superseded and virgin queens subsequently mated. I think you can see that it could take a fairly long time, and the figure of six years for the fixing of the Minnesota hygienic genes seems reasonable.

The genes for *Varroa* resistance are available. It is up to the beekeeper to persist in establishing those genes in his apiary. If the colonies with resistant queens are initially less productive it behooves the beekeeper to make selections from his colonies that are the most productive *and* also resistant to *Varroa*. However, it is well worth remembering that a replacement package for a colony that dies, because of too many *Varroa*, costs close to \$100 and that would be in the neighborhood of 50 pounds of honey at the current wholesale price. Which means that a beekeeper could afford a reduction in yield of nearly that amount of honey if his colony would survive because

the bees had resistant genes. So it's important to look at the stock(s) for *Varroa* resistance in a different light, at least for the first few years of selection and incorporation of those genes.

Education Is The Most Powerful Weapon You Can Use To Change The World.

Nelson Mandela

BC

THE WILBANKS APIARIES, INC.

P.O. Box 12 • Claxton, GA 30417
912.739.4820

THREE BANDED ITALIAN QUEENS

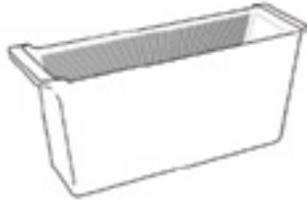
SUMMER QUEEN PRICES AVAILABLE JUNE 1ST - NOVEMBER

	<u>1-9</u>	<u>10-24</u>	<u>25-99</u>	<u>100 UP</u>
	22.00	20.00	19.00	18.00

Queens Clipped \$2.50 • Queens Marked \$2.50. Queens can be shipped by Priority or Express Mail INSURED, or by UPS Next Day and 2nd Day UNINSURED.

Z SPECIALTY FOOD, LLC
Moon Shine Trading Co. & Island of the Moon

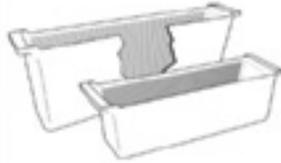
<p>WE BUY, SELL AND PACK:</p> <p>Natural & Varietal U.S. Honey Round Comb Honey Fresh Bee Pollen</p> <p>Retail • Wholesale • Bulk Custom Packing</p>		<p>Contact us: tasty@zspecialtyfood.com www.zspecialtyfood.com 800-678-1226</p> <p>Visit us and send samples to our home: 1250-A Harter Ave. Woodland, CA 95776</p> <p>Z Specialty is a small, family run packer of honey and other tasty treats. We'd love to meet & speak with you!</p> <p><i>Buying and Selling Honey from America's Beekeepers since 1979!</i></p>
--	--	--



All New! 2 Gallon / 2 Frame Feeders for 9 5/8" Hives

1-9 = \$ 3.10/ea
 10-559 = \$ 2.90/ea
 560 + = \$ 2.80/ea

Same Great Quality as our
 Deep Feeders!
 35 per case/560 per pallet



In-Hive Feeders
 9 5/8" or 6 3/8"
 1-9 \$2.60/ea
 10-799 \$2.40/ea
 800+ \$2.30/ea



Cap n Ladders
 9 5/8" or 6 3/8"
 1-9 \$1.55/ea
 10-799 \$1.40/ea
 800+ \$1.30/ea

Polypropylene Hive Bodies



9 5/8" with
 Insulation Panels



9 5/8" without
 Insulation Panels



6 3/8" without
 Insulation Panels

- UV Stabilized Polypropylene
- Snaps together in under a minute
- No Painting / Nailing / Gluing
- Insect and Water resistant
- Insulation comparable to wood with Insulation Panels

Pricing:	1-4	5-99	100+
9 5/8" with Insulation Panels	\$21.50	\$20.00	\$19.00
9 5/8" w/o Insulation Panels	\$16.75	\$15.25	\$14.25
6 3/8" w/o Insulation Panels	\$14.50	\$13.50	\$13.00

Everything we sell is Made in U.S.A.



Mother Lode Products
 15031 Camage Ave.
 Sonora, CA 95370
 Ph: (800) 657-9876
 Fax: (209) 532-5917

Order online at: www.motherlodeproducts.com

Valley Bee Supply, Inc.

46 Tinkling Spring Rd, Fishersville, VA 22939

Woodenware Manufacturer

Tools & Smokers

Protective Clothing

Nutrition

Medicines

Extractors

Extracting Equipment

Containers

Bottling Equipment

FREE SHIPPING
 Orders over \$99

Phone: 540-941-8127 www.ValleyBeeSupply.com Toll Free: 866-220-0198

Photo Credits: Jennifer Smith, Lexington, VA

Got A Question?

Ask Phil

Phil Craft

He Knows!

Send your questions to Phil at
phil@philcrafthivecraft.com
www.philcrafthivecraft.com



A beekeeper in Wisconsin writes:

I'm a first time writer.

I'm also a first year beekeeper but I've hosted bees on my property for three years and subscribed to *Bee Culture* for two years before starting the two hives I have now. These were started this Spring from (2) 3# packages w/ Italian queens. Both hives are doing great - I have double brood boxes (FULL) and two deep supers one of which is at about 60# but the current dearth has left the second super's foundation (wood frames, pre-waxed Rite-Cell w/ extra wax and sprayed w/sugar water and stimulant) with no comb yet.

(...) The reason for my question(s) is that - I'm having a blast keeping bees! I intend to use all new equipment and I've just finished branding, painting & numbering woodenware to very quickly go from two hives this year, to 25-30 in 2016.

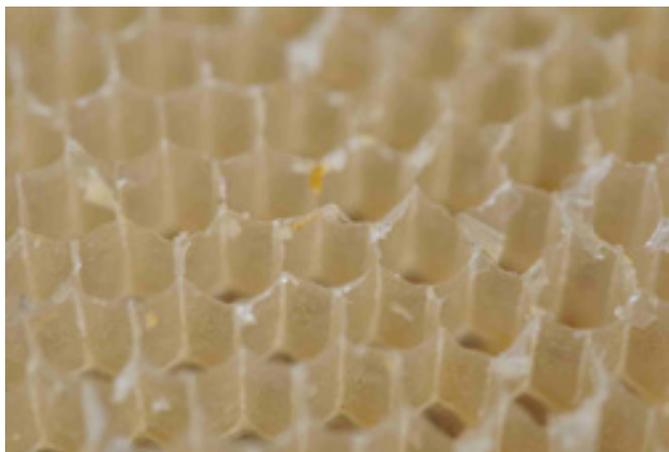
I'm also going to be trying some of the basic queen rearing next year so getting "mini-mating" & full size nuc frames combed out, etc. without brood would be great.

Phil replies:

In your email you asked a series of questions related to methods of encouraging comb production. I will answer those individually in the body of this article, but first I would like to talk generally about honey comb. It all starts with the production of bees wax. Honey bee workers are equipped with wax glands located in the ventral (bottom side) of their abdomen. In the same way that insects are made up of three segments - head, thorax, and abdomen - the abdomen of a honey bee worker is sub-divided into nine segments. The wax glands are located between

the fourth and seventh segments. Wax is produced as a liquid, and then hardens into small flakes when the liquid is exposed to the cooler air in the hive. The bee uses its legs to move flakes to its mouth where the wax mixes with secretions from salivary glands and is worked into comb. Wax production and comb building are age dependent activities. Though honey bees can make wax when they are as young as two days old, their production ability peaks at 10 days and lasts until they are about 20 days old, at which time they move on to other tasks.

Of course, in a Langstroth hive, comb is built on foundation. You mentioned that you used plastic. Plastic versus wax foundation is one of those issues which has no clear cut answer and so sparks endless debate and discussion on beekeeping forums. The arguments come down to the undoubted convenience of plastic versus the feeling that wax is more natural and bees will draw comb out on it more quickly. My own experience is that, in a strong nectar flow, bees will draw out plastic foundation very readily. Might they draw comb out on wax a little more quickly? Perhaps, but installing wax foundation takes time and effort on my part - time during which my bees could have been producing and filling comb. Sometimes, especially in the Spring when things are happening quickly in my beeyard, I find it very handy to stop by my local bee supplier and pick up preassembled frames with plastic foundation. I can even store extras outside in my beeyard - not a good idea for frames with wax foundation which is susceptible to damage at high temperatures. Overall, I prefer wax. I guess I just like the way it smells, and maybe the bees draw it out better late



Brand new wax is almost pure white.



Light honey combs.

in the season. However, I often make use of plastic when convenience and time are my primary considerations. It's another tool available to beekeepers.

Much more important than the type of foundation used is a condition you alluded to in your question: nectar flow or dearth. Beekeepers have long noted that the onset of the Spring nectar flow is accompanied by the appearance of clean white wax, seen in repairs to existing comb, as new burr comb, and as newly drawn comb on foundation. The timing is not coincidental. Honey bees do not produce new comb just to keep the young bees busy; they make it when they need more space for nectar and pollen or to rear more bees. Though, fortunately for us, bees store honey far beyond the requirements of the colony, they do not draw out large amounts of comb unless they have an immediate need for it. If they draw out a few frames and have nothing to fill them with, they stop. Boxes placed on a hive in a time of dearth will not yield the combed out, broodless frames that you are hoping for.

One circumstance in which a colony will build comb very rapidly is that of a newly housed swarm. I have known large swarms placed on new foundation to draw out a deep box in a matter of days. This frenzy of wax production is due to three factors. First, the colony has an urgent need for cells for both for egg laying and food storage. Second, swarms contain a large percentage of young bees less than 10 days old. Third, most swarming occurs during nectar flows. However, keep in mind that, though a large, captured swarm can make you a lot of comb quickly, it will also fill it almost as quickly.

When it comes to maximizing comb production, we might look at the techniques used by beekeepers who market comb honey. Their business requires fresh comb for every harvest, so these folks should be experts on the subject. One thing they do is to make use of strong, captured swarms. Another is to partially mimic the conditions of a swarm by crowding bees from a two story hive into a single brood box, then placing supers of foundation over a queen excluder above the box. The combination of a lot of bees to collect nectar and the sudden need for cells to store it in results in a rapid drawing of comb. Of course, crowding colonies in this way can cause them to swarm in earnest – a common problem among comb honey producers.

Yet another method they use is to create a "shook swarm," or artificial swarm. The procedure involves moving a strong hive to a new location within the same bee yard and replacing it with a new hive consisting of a single brood box with frames of foundation. Then half to two thirds of the bees, along with the queen, are shaken from the strong hive into the empty box and topped with a queen excluder and honey supers. This constitutes the artificial, shook swarm. Placing it on the site of the original hive ensures that it will inherit that colony's entire field force, further strengthening, and crowding, the new colony. Since there are no cells for the queen to lay eggs in, the bees concentrate on drawing comb. They will quickly draw out the brood box and turn their attention to the frames above the queen excluder. Meanwhile, the original hive will be fine in its new location. It can be re-queened or, if it was a strong colony already in swarm mode and making queen cells, it will produce its own. With lots of capped and uncapped brood and a new young queen, it should rebound, and may even be capable of producing



A healthy brood pattern with honey in the corners.

a super or two of honey.

The same strategy can be used with deep hive bodies as honey supers. After extracting the honey, a beekeeper will be left with extra deep frames of clean comb for future use in new nucs or to replace culled frames in brood boxes. One word of caution: a number of years ago, I used several deep hive bodies with new foundation as honey supers – not using any special technique – but just placing them over strong honey producing colonies. While this worked well, I did not enjoy pulling the deep honey supers, which weighed about a hundred pounds each. Though I don't necessarily trace my back problems back to this experiment, it took place prior to my back surgery, and I have not used deeps as honey supers since.

Another, very simple, technique to encourage comb building or to supplement any of the above methods is to add young bees to a wax building colony. When brood frames from another hive are shaken in front of the wax builder, the older, foraging bees will return to their original hive, whereas the young bees, which have never flown, will enter the hive and remain. What all of these strategies have in common is that they concentrate a strong population of bees in an area without sufficient comb for egg laying and food storage. Those are also the conditions which often precipitate swarming. The other common thread is that none of them is effective in the absence of a nectar flow.

Has anyone combined the right genetics, equipment, timing and placement to configure a colony that will willingly "pound on the wax" and build comb on pre-waxed plastic foundation? And if so, was it done without depleting the health or viability and will to survive and grow (expand & thrive).

I do not know of any research into using genetics to increase comb building, but the conditions which promote it are well understood as discussed above.

To keep the comb clean for first time use - Can the hive be kept "broodless", by sequestering a large queenless package, and using the pheromone products that simulate a laying queen.

Trying to maintain broodless colonies for any length of time would be counterproductive as well as unnecessary. Remember, the life span of a honey bee emerging in the summer is less than 40 days, and the period of maximum

BEE COZY WINTER HIVE WRAP

SMART WINTERING

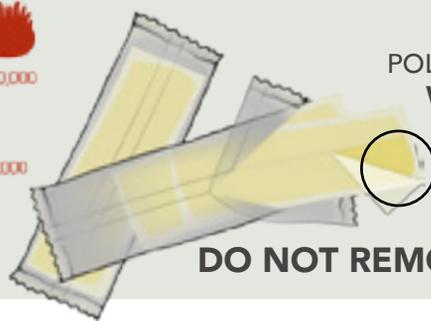
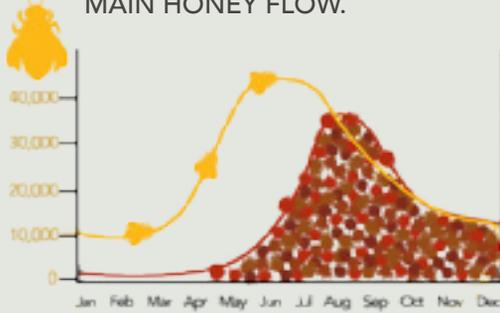
Wrapping provides the insulating layer bees need to reduce the overall rate of heat loss from the hive while also supplying a wind break for breezy locations. By preparing your bees for winter, the colony is more likely to have a productive season and consume less feed during the winter months.



Find a distributor near you
visit NODGLOBAL.com

MITE LEVELS IN A HIVE OVER THE BEEKEEPING SEASON

TREAT IN EARLY FALL WHILE THE LAST HONEY SUPER IS ON TO PROTECT WINTER BEES. TREAT IN THE SPRING TO BUILD UP BEES PRIOR TO THE MAIN HONEY FLOW.



MAQS IS A FORMIC ACID POLYSACCHARIDE GEL STRIP WRAPPED IN ECO-PAPER WHICH ACTS AS A WICK TO CONTROL THE RELEASE OF FORMIC ACID VAPORS.

DO NOT REMOVE PAPER WRAPS

HEALTHY BEES. HEALTHY PLANET.

To learn more call 866 483 2929 or visit www.NODGLOBAL.com



**American Honey
Producers Association**

www.AHPAnet.com



**Join Us!
47th Annual
Convention
&
Trade Show
January 5-9,
2016**

**Albuquerque,
New Mexico
Embassy Suites**



Dark brood combs.

wax production is even shorter – about 10 days. For efficient comb production a colony needs a constant re-supply of newly emerged workers, and for that you must have a fertile queen. Even captured and “shook” swarms which build new comb quickly, can only do so for a short period. During the time between making the first cells to receive eggs and the emergence of those bees, the population of such colonies is slowing declining, with some bees dying of old age and no new ones emerging. While this is not readily noticeable in a large population, it is not sustainable in the long term.

If what you are looking for is clean looking wax, all you need to do is put the foundation to be drawn over a queen excluder. What makes wax dark (aside from some natural darkening that occurs over time) is propolis, cocoons and other waste products from rearing brood. Compare the dark oval in a frame of brood comb that has a normal laying pattern to the light comb from a honey super. Wax from a super which has never contained brood will remain light in color for many years.

Can feeding comb producing colonies with plenty of “high test” syrup and stimulant help?

Feeding with sugar syrup made from equal parts granulated sugar and water is helpful – especially when installing natural or artificial swarms on foundation with no comb – in that it sustains the colony until it is able to gather sufficient nectar and pollen and make comb to store it in. However, it has its limitations. If you continue to feed after placing honey supers, the bees will simply fill them with sugar syrup, which is not honey, and of no use to you. Better to wait for a nectar flow and let them fill as many supers as they can with honey. Since bees only make comb at the rate at which they need it, you can either have new comb with sugar syrup or new comb with honey. You will not get new comb only.

If by stimulants you mean nutritional supplements, I am not aware of any research which indicates that they

promote the production of comb except in as much as they may contribute to the overall health of the colony.

How long (long enough (?) to get a couple of batches of deep brood & deep honey frames combed out?)

The amount of time it takes depends on the strength and health of the population, the proportion of bees in the right age range (10 to 20 days old), and the nectar flow. It is possible for a strong colony, especially a large recently hived swarm, or “shook swarm”, to draw out a deep full of foundation in less than two weeks under optimal conditions.

Could the bees be fooled into drawing out comb before installing a queen, and letting them build up normally?

If bees were installed in a hive without a queen or brood, it would not take long for the colony to develop laying workers, which is a BIG problem. Removing a queen from a strong hive with plenty of brood might cause the colony to channel its energy into producing comb since less would be required for caring for larvae. Pheromones from the brood would suppress the workers’ urge to lay for a while. However, as the brood emerged the cells would be filled with nectar, leaving no place for the queen to lay when she is reintroduced into the hive, and creating another complication. Also, if the placement of a new queen is delayed too long, laying workers would again be the result.

What about combining a comb building colony with another young colony w/exist queen to give them more resources?

It still comes down to population, bees of the right age, and a natural nectar flow or feeding. Combining colonies, purchasing larger packages, and combining packages as well as the methods described above will all produce strong colonies capable of rapid buildup given sufficient food sources. As before, monitor for signs of swarming. If you lose a queen and half your bees after creating an artificially strong colony, you haven’t gained much.

If working with a “super hive” could you periodically shake off and stock the “comb builder” with enough bees to work comb and then go back into the existing big hive to “recover” from all the work? If so, how often (many times) in a “winter shortened” season do you think you could get the bees to do this and still thrive?

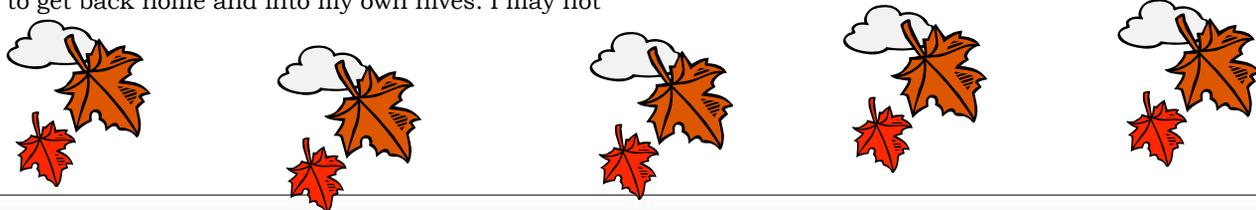


Over populating a hive to draw out new comb.

There is no question of recovery, since bees age out of the comb building phase of their lives and start doing other things, such as foraging. You can remove bees, but you cannot later re-use those same bees for comb building; they are too old. Shaking out bees from one hive in front of a second is a viable strategy for building up comb in the latter, as I described above. It could probably be done every few weeks without harming the stronger hive. Keep in mind that both hives need young bees to draw out comb and to tend to the queen and brood, and both also require foragers to bring in food and water. Perhaps instead of thinking in terms of supers and comb builders, you should concentrate on keeping both hives strong, well nourished, and disease/parasite free. You seem to be doing well so far.

A few last comments. I very much appreciate your enthusiasm, your questions, and your efforts to think outside the box. This fever is one of the reasons that I enjoy working with new beekeepers. The fascination with honey bees comes about because they are so . . . well . . . , fascinating. I am sometimes on the road for a week or more at a time, speaking and visiting with beekeepers. I often find myself being re-infected with the fever through my contacts with new beekeepers especially, and I cannot wait to get back home and into my own hives. I may not

even have any particular tasks to do; I just want to be with the bees. However, new beekeepers need to remember that we have been practicing the art and science of beekeeping in very much the same way since shortly after Reverend Langstroth discovered bee space and designed his new hive over 150 years ago. It ain't rocket science, but there is much to learn. It reminds me of trying to teach my kids to drive, or of anyone learning a new sport. It's not enough to learn all the rules and practice the mechanics. To be really good means being able to react in certain situations without having to think things through, because you've seen it and done it so many times before. I make these comments as a response to your plans to increase from two to 25 or 30 hives and start queen rearing in your second year of beekeeping. I have known a number of beekeepers whose zeal was quashed when disaster followed trying to expand too much too quickly. There is a huge difference between taking care of two hives, and 25. For that matter, there is a huge difference between managing two hives from packages and two mature hives. My advice, based on more than 15 years of helping new beekeepers, is to go more slowly, perhaps increasing to ten or twelve hives next year, and adding six or eight the next. I want to see both your enthusiasm and your success continue. **BC**



THE MULTI-TOOL FOR BEE HEALTH

- AID IN OVERALL HEALTH OF BEES
- HELPS BUILD-UP PACKAGES, NUCS AND SWARMS WHEN ADDED TO YOUR FEEDING MIX
- HELPS PREVENT SYRUP FERMENTATION
- STIMULATES BEES TO DRAW OUT NEW FOUNDATION FASTER WHEN USED AS A SPRAY
- PROMOTES HEALTHY, VIGOROUS HIVES WHEN USED AS A FEEDING STIMULANT DURING LATE WINTER, EARLY SPRING AND DEARTH OF NECTAR
- NATURAL CALMING EFFECT WHEN SPRAYED ON BEES

FD-350 Pro Health PINT\$ 19.95
(MAKES UP TO 25 GALLONS)

FD-351 Pro Health GALLON~~\$ 89.95~~
(MAKES UP TO 200 GALLONS) **\$ 79.95**

FD-352 Pro Health 5 GALLON.....~~\$ 439.95~~
(MAKES UP TO 1000 GALLONS) **\$339.95**



*Free shipping applies to most orders over \$100 sent standard ground service within the lower 48 states. Prices are subject to change without notice.

800-880-7694

PRICES VALID THROUGH 11/30/15



An Employee Owned Company



www.mannlakeltd.com

ACORN™

BEEKEEPING EQUIPMENT

The Bee's Choice for 2015

"THE NEW STANDARD OF EXCELLENCE AND QUALITY"



No Bowing or Warping

Acorn One Piece Plastic Frames

- Flatter, Stiffer, Sturdier
- Redesigned Mega Strong Ears Last Forever
- 9-1/8" 6-1/4" Sizes



FLATTER STIFFER STURDIER

Plastic Snap-in Foundations

- Plastic Snap-in Foundations fit well in 9-1/8" and 6-1/4" Wood Frames
- Optional Breakaway Communication Hole



BRAND NEW!

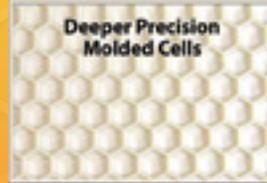
6-1/4" Drone

Drone Combs

- Integrated Pest Management (IPM)
- Varroa mite control
- Queen Breeding
- 9-1/8" 6-1/4" Sizes

Features

- Well Defined Precision Molded Cell Base
- High Quality Beeswax Used
- Rigorously Field Tested
- Excellent Bee Acceptance
- **Superbly Waxed - Standard, Extra Heavy Available!**



Nick Lissaman
20 years experience

info@acornbee.com
www.acornbee.com
13818 Oaks Ave. Chino, Ca 91710

Call Acorn Bee Today!
877-255-6078



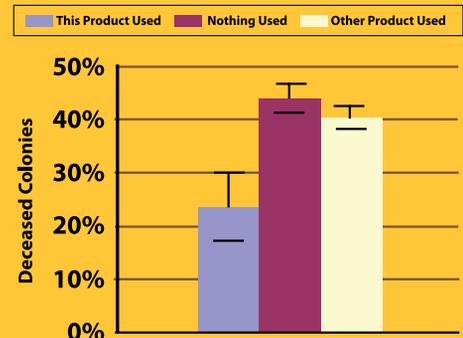
Make the Decision Today
to Better Treat Your Hive Tomorrow



Bee Informed Partnership (BIP) Management Survey produced astounding results. Here is a comparison of average winter colony mortality among beekeepers who reported **treating with ApiLife Var***, **not treating with any known varroa mite control product**, or **not treating with ApiLife Var**, at least once, between April 2012 and March 2013.

* This information is for educational purposes only and references to commercial products or trade names do not imply endorsement by the Bee Informed Partnership or its members.

ApiLife Var Use (Southeast)



ApiLife Var | *An Efficient Mite Treatment that is Safe and Reliable.*



Visit: BrushyMountainBeeFarm.com (or) Call: 1-800-233-7929

Brushy Mountain Bee Farm

Serving Beekeepers with the Best for more than 35 Years

B & B Honey Farm

Colony Quilt Only From B & B Honey Farm!

5917 Hop Hollow Road, Houston MN 55943
 Phone: 1 (800) 342-4811 Fax: 1 (507) 896-4134
 bbhoney@acegroup.cc www.bbhoneyfarms.com

**FLEXIBLE
 INEXPENSIVE
 R-VALUE OF 3.7
 LIGHTWEIGHT
 INDESTRUCTABLE**



18" Individual Wrap \$9.75 each
27" Individual Wrap \$13.00 each
225' Roll of 18" Wrap \$250.00
225' Roll of 27" Wrap \$397.50







Predators In Their Tracks

And Keep Your Bees Protected



RACCOONS



BEARS



SKUNKS

**SATISFACTION
 GUARANTEED**
 or your money
 back!

Protection Against Night Time Predator Animals

Nite•Guard Solar attacks the deepest primal fear of night animals, that of being discovered. When the sun goes down, Nite•Guard begins to flash. The simple fact is that a "flash of light" is sensed as an eye and becomes an immediate threat to the most ferocious night animals.

THE ORIGINAL
NITE•GUARD
 niteguard.com Solar



Four units will give complete 360-degree coverage

\$19.95 EACH
FREE SHIPPING
 When you buy 4 lights or more
 PROMO CODE 4FREE

PO Box 274 • Princeton MN 55371 • 1.800.328.6647

 FOLLOW US ON FACE BOOK
www.facebook.com/niteguardllc

Before obtaining the first bee colony, the future sustainable apiculturist must master key aspects of bee biology. Here we look at the activities of the house bees, foragers and drones.

House Bees (Bees Working Inside the Hive But Outside the Brood Area)

At a certain stage, as bees mature, they move away from the brood area to the areas immediately beside the brood. This includes the areas where pollen and nectar are being processed, as well as the area where nectar is being converted into honey. It is useful to call these older bees house bees since they are leaving nurse bee duties but are not yet leaving the hive to collect pollen, nectar, propolis or water.

Pollen Processing – Bees transition to food processing after being the primary consumers of the products. Field bees serving as pollen forgers enter the hive with two pollen pellets on their corbiculae (pollen baskets), and go to the comb near (and sometimes in) the brood area. Once they find an open cell containing other recently collected pollen, they reverse the packing direction and kick off the pollen loads directly into the cells, each pellet in pairs. The house bees then add additional stomach contents (including nectar/honey that contains microbes for conversion to bee bread) and compact the pollen into the cells by pushing with their heads. This increases the efficiency of storage by two and half times. In the fall, the pollen may be coated with a thin layer of honey, but most of the year the house bees keep the pollen cells open and available for consumption.

Nectar processing – When a forager returns to the hive, she

COLONY DEVELOPMENT PART II

Mastering Bee Biology

Larry Connor

seeks a house bee (one that has not flown) to transfer the nectar to her. The forager carries the nectar in a specialized organ called the honey stomach. The forager regurgitates the nectar in droplets and offers them to the waiting house bees for ripening before she returns to the field. If the honey isn't transferred, the forager must ripen the nectar herself.

To ripen the honey, a bee rests quietly on the honeycomb and produces a bubble of the honey stomach's contents, exposing it to the warm and dry air inside the hive. She repeats this process over a 20-minute period before placing the nectar into empty cells in the hive. At that time the nectar has been infused with the enzyme invertase and has been reduced in moisture content. Now it needs time to complete the conversion process in the dry air of the hive. The worker puts drops along the ceiling of a drawn-but-empty cell inside the honey chamber to ripen. The availability of ripening space represented by abundant, empty, drawn comb appears to be one reason why bees collect more honey when such comb is present.

Chemical conversion of the honey continues while in these uncapped

cells; exposed to the warmed, dry air of the hive as the moisture continues to evaporate.

The house bees are the hive members that normally handle this duty. When the flow is heavy, many bees are required to ripen the nectar crop into honey. One advantage of a large and age-diverse colony of bees is their ability to change duties and be available to support a strong nectar flow. They do this much better than a smaller or less age-diverse colony.

Wax secretion – When house bees consume nectar and honey, it stimulates them to digest the carbohydrates and produce wax scales on eight wax glands on the underside of the abdomen. These bees manipulate the wax scales with their mandibles to build the amazing wax comb. Some of these bees are responsible for keeping the wax production area warm, using their antennae to measure the comb temperature and heat the area by flexing their wing muscles without moving their wings. These bees have been called heater bees.

Guard duty – There are bees that monitor the hive for invaders, including wax moths, small hive beetles and *Varroa* mites. Their regular duty is to keep bees from other colonies from robbing their hive of the honey and pollen stored there.

Undertaker Bees – A specific group of house bees patrol the hive and remove dead members of the colony, taking them to the hive entrance, and flying away from the entrance for 15 feet or more. They then drop the body of their dead sister



Packing in pollen.



Young worker bees secreting wax from their wax glands. (photo by Kathy Keatley Garvey)

into the surrounding environment, making it difficult for the beekeeper to monitor colony losses under normal conditions.

Other duties – There are other duties of house bees, including general house keeping, queen and drone cell construction and regulation, wash-board activities at the entrance (in kept bees, removing bark from the non-existing bee tree entrance) and much more. Undoubtedly there are duties we have yet to discover.

Foraging Activities

The oldest worker bees in a hive are usually the field bees, or foragers. They search and collect nectar, pollen, water and propolis. Some constantly look for a better supply of food than the one they currently have. Nurse bees require food for brood feeding and beg for food to stimulate foragers to forage for additional food resources. As long as they are able to gather nectar from flowers and unload it at the hive, they will continue to forage. Foragers spend two to four weeks foraging in the Summer. They may be found dead in the field, often in flowers –their bodies worn and wings tattered. From emergence to death, this bee may have lived for just four to six weeks.

Nest Reproduction (Swarming)

Bee colonies are social organisms with complex behaviors. One of these complexities is in the way

the colony reproduces. With social wasps, bumble bees, and other social insects, new colonies are established by a single mated female reproductive (queen). For example, bumble bee queens mate in the fall and overwinter in the leaf litter in the ground and search for a new nest in the spring. They do not use the nest they were produced from in the previous year as the hives are often destroyed by small mammals and must build their colony slowly.

Honey bees are unique in reproducing their social unit by swarming. This is an amazing process that involves thousands of worker bees and a queen leaving the hive in a process that stimulates them to find a new home. The rest of the bees and a replacement queen will stay behind and maintain the old home site. Some colonies of bees swarm more than once each year, producing more than one new bee family with each swarm. This is a good thing, since new colonies in nature have a very difficult time living to be one year old.

While clustered in a temporary location, swarms regroup for a few hours to a few days while scout bees leave the colony and search for a good home. Scout bees search for a cavity that is big enough, but not too big. It should be safe from predators and environmental hazards. Empty holes in trees, cavities in rocks and human structures are common sites for bees to select. Once the nest is selected, the bees all fly to it and build

beeswax comb and start foraging for food. The queen starts laying eggs, and a new colony is established. Swarming is discussed in detail in Chapter Swarming.

Drones

Drones are the males and have no apparent duty in the hive other than to mate with new queens from area hives. They are genetic envoys that actively seek virgin queens necessary to supply the diversity of sperm healthy colonies need for survival against diseases. Drones die when they mate. It is unusual for drones to mate with queens from the same location – both queens and drones have behaviors that ensure out-crossing and minimize inbreeding. This makes the small-scale beekeeper dependent on the drones produced in colonies within a mile or more radius.

Drone saturation requires multiple nearby locations for success. Sustainable beekeepers must understand that the drones they produce in one apiary are probably NOT the drones that will mate with their virgin queens. Instead, the queens will mate with drones from neighboring apiaries and bee trees.

Drones have a 24-day development time, the longest of the bees. Drone brood is produced only when the colony is in a growth period, or if the queen has depleted



A drone. Note the large eyes that touch at the top.

QUEENS AVAILABLE

Healthy Queens
= Healthy Hives

Year Round

Premium Quality Queens
Produced in the Heart of
Northern California

Olivarez Honey Bees, Inc.



CALIFORNIA
(530) 865-0298

HAWAII
(808) 328-9249

TOLL FREE
(877) 865-0298

Big Island Queens
A Division of Olivarez Honey Bees, Inc.



Like Us On
facebook

WWW.OHBES.COM

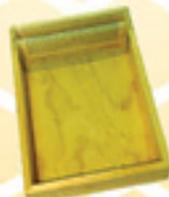
We accept all major credit cards



DONT BEE BEHIND THIS SEASON



10 Frame Woodenware
#W920C



10 Frame Syrup Feeder
#W621



Swarm Trap
#M522



Canvas Gloves
#M344



1 lb Muth Jar
#B540



4x7 & 4x10 Smoker
#M927/M928



Hive Carrier
#M536



Manufacturer Of Quality
Beekeeping Supplies Since 1976

www.millerbeesupply.com
888-848-5184
info@millerbeesupply.com

496 Yellow Banks Road
North Wilkesboro, NC 28659

her supply sperm stored in her body.

Healthy and diverse drone populations are necessary for genetically robust, disease resistant colonies. When maintaining a special line of bees like the Russian stock, it is necessary to produce large colony numbers of Russian drones adequate to supply the need for the successful production of Russian queens. This may be a challenge when the nectar flow is over, or when a colony is in stress, as workers expel drones from the hive to save resources (pollen and nectar).

Drone Comb

Drone cells are larger than worker cells, usually about 16 per square inch of comb space compared to 25 worker cells per square inch. Drone cells are used for the production of drone brood, but they are also the most efficient use of wax for honey storage.

Brood

Drone brood is present as part of the total brood population during the Spring and Summer. Drone brood is usually located to the side or below the worker brood on a frame. These eggs, larvae and pupae are kept in a compact region of the hive at 95°F. to ensure rapid and healthy development of the young bees. Drone brood may serve as a heat sink for the worker brood during exposure to cold, but this has not been established.

Adult Drones

Drone bees in the hive develop from unfertilized eggs and are essential for the mating of new queen bees. Drones are a natural part of the hive, but they are normally produced by the colony only during natural mating weather. We do not



Drone Pupa

find new drone production in cold climates during the Winter or when there is no food coming into the hive. Drone populations peak when worker bee populations peak, about the same time as swarming. In strong colonies with abundant food reserves, drones are present for most of the Summer, but their production slowly declines as Summer begins. While Florida hives start drone production in January or early February, any

drones in Michigan colonies in January reflect a queen failure the previous season.

Seeley and Morse's work showed that vigorous, healthy colonies produce about five percent of the colony population in drones. By the Summer equinox the key stimulation of increasing day length slowly reverses, but drone rearing continues until September or November (depending on latitude).

A strong incoming food supply prolongs drone production, or it may be done by early June if the pollen and nectar supply has already dried up. This happens in parts of Florida and Texas, as well as other areas of North America.

There may be a second cycle of drone production in the late summer and early fall to coincide with local nectar flows, if they happen. When the incoming food is reduced or stops, worker bees become selective about the number (and age) of the drones they keep, even if they are their brothers. The colony rules!

Successful beekeepers learn to accept normal drone populations in a colony as a reflection of a healthy colony. It indicates that virgin queens in the area will be well served by your healthy, strong and well-fed drones.

Drones are the only bees suitable to give to curious types who want to handle a bee. They are often warm from the heat of the hive and fuzzy to touch. Use drones to practice marking bees with paint. If you mark the drones in one colony, you can watch how they spread to other colonies in the apiary over a period of several days. Who knew you could use drones as both an art project and a science experiment. **BC**

Consult www.wicwas.com for the latest quality books on beekeeping.

Package Bees In Ohio
Taking Orders For 2016
George Taylor
WALDO OHIO APIARIES
Box 122, Kilbourne, OH 43032
740.524.6241
740.815.7792
waldobee@msn.com
www.waldobees.com
OH nail biters, Italian & Russian Queens are available thru end of September

WEAVER'S FAMOUS QUEENS
BUCKFAST & ALL-AMERICAN
Beekeeping Supplies & Beginner's Kits
Summer 4-Frame Nucs - Pick Up Only
THE R WEAVER APIARIES, INC.
16495 C.R. 319
NAVASOTA, TX 77868
**RWEAVER.COM**
936.825.2333 • rweaver@rweaver.com

**Kevin Rader**
Agency Principal
BEEKEEPING
INSURANCE SERVICES
21845 Powerline Road, Suite 205
Boca Raton, Florida 33433
www.beekeepingins.com
tel: 888-537-7088 krader@beekeepingins.com

Beekeeping Supplies



Woodenware:

10-frame, 8-frame, 5-frame · Budget, Commercial
Unassembled, Assembled, Painted · Volume Pricing

More Products:

Foundation · Beekeeping Books · Protective Clothing
Hobby Extracting Supplies · Medication & Feed

Dealerships Welcome! Call for information.

10-frame Woodenware:

(Unassembled commercial low volume prices)	List Price
Telescoping Lids	\$ 14.36
Inner Covers (raised panel)	\$ 6.46
Top Feeders (with floats)	\$ 16.09
Shallow Supers (finger joint)	\$ 8.43
Medium Supers (finger joint)	\$ 9.21
Deep Hive Bodies (finger joint)	\$ 12.72
Frames (any size)	\$ 0.87
Economy Nucs	\$ 17.78
Ass. Screened Bottoms Boards with trays	\$ 24.34



Call for a free 2015 catalog!

Rochester, Washington:
360-280-5274 hjweaver@emypeople.net

Pueblo, Colorado:
719-250-4005 dwrightjoyceeby@gmail.com

Mendon, Michigan:
269-496-7001 beeline@abcmailbox.net

Quality & Service Since 1907

C.F. Koehnen & Sons, Inc.

Queens
Italians & Carniolans

Packages
All sized orders for pickup

Queen Shipping Supplies

C.F. Koehnen & Sons, Inc.
3131 Highway 45
Glenn, CA 95943

ph (530) 891-5216
www.koehnen.com

fax (530) 934-2613
bees@koehnen.com

STATE POLLINATOR PROTECTOR PLANS

Protecting Pollinators Takes Funding

Michele Colopy

States are being encouraged to develop Pollinator Protection Plans. Whether it is state or federal government promoting the development of these plans, little will change without funding. At a minimum, states need funding for apiary inspectors and lab testing of honey bees killed due to the result of alleged pesticide exposure. States, or the federal government need to provide sustainable funding in order to successfully implement these Pollinator Protection Plans.

To support local decision-making relative to pollinator protection, State and Tribal entities need:

- Quality label data and language
- Knowledge of inert/ other ingredients within pesticide products
- Knowledge of tank mixes- issues with inadequate label guidelines, synergism of products
- Proper pesticide application timeframe for various crops

To investigate a bee kill due to alleged pesticide exposure, the investigator needs to reference a pesticide label which is supposed to clearly define pollinator protection. Knowledge of inert ingredients is convoluted on pesticide labels, but the information is needed when investigating a bee kill. An active ingredient may not have killed honey bees, when it was actually the “other ingredients” combined in a tank with other pesticides. Tank mixes and their unknown chemical synergisms are of grave concern to beekeepers. The combinations of fungicides, herbicides, insecticides, and more into one pesticide application across a crop is unregulated, lacks label guidelines and precautionary use statements, and puts pollinators at

great risk. Finally, labels do not guide the user as to the best time of day to apply a product to combat the pest, and still protect honey bees. Reliance on pesticide labels for “guidance and pollinator protection” will undercut any Pollinator Protection Plan.

The division of beekeeping “services” into two categories: honey bees under contracted pollination service, and those honey bees *not* under contracted services, continues to create animosity between agricultural stakeholders. It shows EPA still does not understand the benefits pollinators provide



to agriculture and the ecosystem, and still does not protect managed and native pollinators from acutely toxic pesticides. EPA states the two scenarios were devised based on “*where bees are brought on site under contract vs. when bees may be present but the grower may not derive a benefit from the presence of bees on his or her property.*”¹ Science shows us whether a crop is 100% reliant upon insect pollination, or 10% reliant upon insect pollination, crop yield increases through pollination.² Retaining a pesticide label with exceptions to apply acutely toxic pesticides to honey bees *not* under contract pollination is unacceptable.

Clear pesticide label protection guidelines are integral to protecting pollinators.

Definitions of beeyard, apiary registration, and beekeeping licenses can become convoluted, and interpreted to define a beekeeping license/apiary registration as a “contract;” placing any beeyard under the category of contracted pollination services, and therefore protected from acute toxicity pesticide applications. An agreement between a farmer and a beekeeper to place honey bees on land to produce a honey crop, could be interpreted as also falling

under the auspices of “contracted pollination,” and protection from acute toxicity pesticide applications. Apiary registrations, sensitive crop registries, and beekeeping licenses are *not* contracts; they are a form of revenue for the state, and a method to address “nuisances” (zoning laws), control for bee diseases, and to provide an opportunity for

communication between agricultural stakeholders concerning agricultural practices. The EPA needs to clarify the definition of “contract” for the State Pollinator Protection Plans (also known as MP3s). Beekeepers should not suffer the loss of their livestock simply because they are not under a crop pollination contract. This would not be tolerated in any other area of agriculture.

Too many states are struggling to maintain apiary inspection programs. Fees for apiary registries have not changed in years, possibly decades. Apiary registration fees may not cover the actual costs of apiary inspection in a state. Prospective bee inspectors

refuse to apply, or decline the job due to low pay, no funds for mileage, and no funds for basic tools (hive tool, bee disease testing kits and supplies). One inspector per county might be fine for Kalawao County in Hawaii (13 square miles), but not for San Bernardino County in California (20, 105 square miles). Fully funded state apiary programs are integral to implementing and supporting State Pollinator Protection Plans. Protecting pollinators is the purpose of a State Apiarist. Bee inspectors know how to work a beehive, how to test honey bees, and extract samples of hive products for testing of disease and pesticides. The State Apiarist is part of state agriculture. Working together the state agricultural departments can protect crops and protect pollinators. All are *necessary* for the agricultural economy of the state. All need funded fully to *protect* the agricultural economy of the state.

As the Pollinator Protection Plans are considered, planned, and implemented in states, beekeepers are an important stakeholder in the process. These plans are meant to protect the very insects that increase crop yield, that make possible the fruits, nuts, vegetables, and seeds that comprise a nutritious, delicious diet. State apiary programs, bee inspectors, lab testing of honey bees (for pests, pathogens, and pesticides) are key to protecting our managed honey bees. Funding must be provided to ensure healthy honey bees. Funding must be provided to test honey bees for pests, pathogens, and pesticides in alleged pesticide bee kills. Lab testing provides the science-based evidence of the health, or demise of a colony. The financial burden of lab testing should not be borne by the beekeeper alone. Pesticide incidents are the real-world data being collected in real-time, based on the product, the label, the ecosystem, crop, and human interactions in the process. When an acute bee kill occurs it is a direct causation of all of these factors. Bee kills are costly to the beekeeper in loss of livestock, and reduced ability to fulfill future pollination contracts. Bee kills are costly to the farmer with reduced, or non-existent pollination of their crop.

State Pollinator Protection



Plans will only be as good as the state agricultural leaders want them to be. Successful plans will be welcoming, inclusive, and supportive of all agricultural stakeholders. Successful State Pollinator Plans will be thoughtful, non-partisan, relevant to each state, and representative of each state. Local State agricultural stakeholders must be the leaders within each planning process. National organizations may advise state stakeholders, but by their participation, national stakeholder organizations should not exclude State stakeholders. Beekeepers, especially state beekeeping association leaders, should not struggle to be a part of the State Pollinator Protection Plans; they should be the first call made by a State Agricultural leader. Beekeepers should not have to enact

legislation in order to be included in the State Pollinator Protection Plan committee. State Beekeeping Association leadership is key to successful and accepted State Pollinator Protection Plan. We can gather stakeholders together, hold productive meetings, and even develop a Pollinator Protection Plan. However, if the Plan has no funding to support apiary inspectors, no funding for lab testing of bees and hive products, no funding of enforcement for misuse of pesticides, and/or compensation to the beekeeper for loss of livestock, contamination of equipment, and to the farmer a loss of pollinated crop due to loss of pollination services then neither pollinators, nor crops will be protected.

For more information about State Managed Pollinator Protection Plans (MP3s) visit our website under our *Resources and Research* page, scroll to *State Pollinator Protection Plans and Pollinator Health reports* at www.pollinatorstewardship.org. **BC**

¹**AP NewsBreak: Feds tell farmers to buzz off on pesticides when bees are busy on croplands**, Seth Borenstein, May 28, 2015, <http://www.usnews.com/news/business/articles/2015/05/28/epa-plans-temporary-pesticide-restrictions-while-bees-feed>

²**Contribution of insect pollinators to crop yield and quality varies with agricultural intensification** <https://peerj.com/preprints/184v1.pdf>

Council Welcomes Members

As a nonprofit we have only our “service” to provide: our education programs, advocacy work, and our support of what concerns you. We provide this service to donors, the general public, and now members. August 20th the Board of Directors amended the By Laws to create membership in the Pollinator Stewardship Council. With your support you can help us continue our services to backyard, sideline, and commercial beekeepers in the U.S. Our service, our mission is to defend managed and native pollinators vital to a sustainable and affordable food supply from the adverse impact of pesticides.

We work with state and local

beekeepers and beekeeping groups on your ideas and solutions. We compile information about State Pollinator Plans (MP3s) on our website, so beekeepers can easily access this information as they work on their own MP3s. We have helped state beekeeping groups with legislative actions, sharing the local beekeeper’s voice with their elected representatives. The Pollinator Stewardship Council helped facilitate local projects for local beekeeping groups connecting them with grant funders, or writing the grants for local projects. Working together is how we make change for our honey bees and native pollinators.

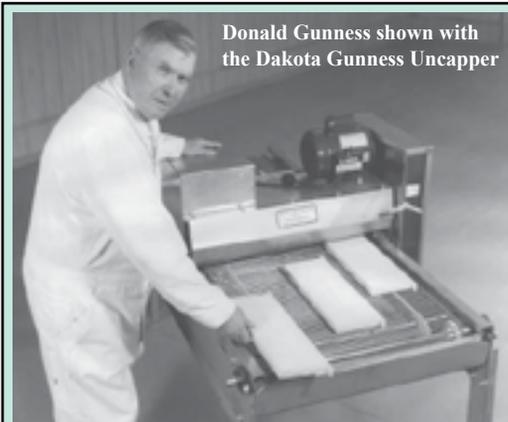
- We respond to beekeepers when contacted. We received and assisted in filing bee kill reports (please see our map on our website for details), provided 894 Quick Guides (generously printed and laminated by *Bee Culture* magazine) to beekeepers, and to beekeeping groups for their honey booths at state and local fairs; gave 28 presentations to local, state, and national beekeeping and agricultural stakeholder groups, and provided research materials, handouts, and similar to local beekeepers for local community meetings.

- We seek the judicious use of pesticides and Integrated Pest Management practices so farmers can protect their crops from pests. And, we believe beekeepers have a right to protect their honey bees from bee toxic pesticides. Our Board members, Science Advisor, and staff are all beekeepers. We know first-hand the real-world experiences of managed honey bees.

We collaborate with others to support honey bee health including the:

- o Honey Bee Health Coalition with the Program Director serving on two of the four workgroups;
- o Joining other Coalition members in creating and implementing the Bee Understanding Project;
- o Working with beekeepers from across the U.S. on the Apimondia USA Bid 2019;
- o Working with our Science Advisor researching hives as they pollinate crops across the growing season, collaborating with commercial beekeepers, and Montana State University.

The Pollinator Stewardship Council is now welcoming members. We have always been here to support beekeepers, to protect our managed and native pollinators. Working together we can increase our impact, we can increase our ability to improve the health of our honey bees. **Join us! Become a member today!** (http://pollinatorstewardship.org/?page_id=3603)



Donald Guinness shown with the Dakota Guinness Uncapper

“These machines are very dependable. They are durable and easy to operate.”

*Matt Doely
Milton-Freewater, OR*

.....
We sell liquid sucrose and 55% High Fructose Corn Syrup as feed for your bees.

Dakota Guinness, Inc.
P.O. Box 106, Abercrombie, ND 58001
888.553.8393 or 701.553.8393
dakgunn@rrt.net • www.dakotagunness.com

Established 25 years

The Beekeepers Quarterly

The independent international magazine with the UK slant for all serious beekeepers

FULL COLOUR throughout • 56 pages of up to date information

- Regular articles by highly respected beekeepers • Practical hints and tips
- Latest research and environmental matters

Only \$40.00 Price includes Surface Post
and **digital edition at £15** - via Page Suite pay by paypal - **approximately \$22.50**

Subscriptions: 623 West Liberty Street, Medina, Ohio 44256, USA
Free Toll Number: 800.289.7668 ext 3220
Please make checks payable to Bee Culture

HORIZONTAL ADVANTAGE

Leo Sharashkin

Look, Listen, And Consider

A fellow beekeeper paused in front of my horizontal hive display, smiled with incredulity, shook his head, and uttered just one word: “Why?” Judging by his raised brow, the question did not really require an answer, but it encouraged me to articulate the reasons for keeping my twenty colonies in horizontal hives.

In the modern age of Langstroth hives and efficient beekeeping methods, is there any reason to want anything else? Is there a thing they can’t deliver? Here is my take on it.

No heavy lifting

With a horizontal hive, a frame of honey (6 lb) is the heaviest you *ever* have to lift. There are no heavy supers or – God forbid – honey-bound deep boxes to handle. If you are young and strong, or have a fleet of forklifts and a crew of capable workers, the weight may seem like a trifle, but as my friend Jeremy joked, “all the money you make as a beekeeper is spent on back and knee surgeries after you are 65.” He knows it first-hand: owner of a commercial-size operation in upstate Michigan, he had to switch to horizontal hives after injuring his back handling Langstroth boxes.

I feel so good when a 94-year-old gentleman stops by my workshop to buy a horizontal hive, or when a 74-year-old lady thanks me for the long hives that enabled her to continue “keeping the beautiful girls,” or when Paul from UK emails me saying he is making a long box bee hive so his sister who is in a wheelchair can maintain her own colony. Do you think she would ever be able to get into beekeeping with a Langstroth?

Easy access to all frames

In a horizontal hive you have instant access to all frames without shuffling any boxes around, saving you the strain and avoiding disturbance for the bees. Adding more frames on the side, or pulling frames with honey can be accomplished with minimal, if any, interference.

Top bars touch

Long hives have no supers for the bees to go into. For this reason frames’ top bars can be made to touch along their entire length. This is one of my favorite features of horizontal hives, making them sheer pleasure to work with. You open the hive and do not see a single bee. Instead, a neat row of top bars. For the keeper it means no need for an inner cover, no issues with propolis or burr comb buildup above the top bars, and quicker hive visits. For the bees it means less exposure and disturbance, and a nest mimicking the structure of their natural habitat – a tree cavity, where the combs are attached directly to

the ceiling, without any bee space over the comb. The ceiling of touching top bars prevents heat loss during the wintering and in the Spring, and eliminates sudden changes in the nest’s microclimate when the hive is opened.

During the early Spring you can judge the colony’s state by simply placing the palms of your hands on the top bars. The feeling of warmth means the colony is successfully rearing brood. And – just as you can tell the state of a car by the sound of the engine – you can check on the progress of a colony by putting the ear to the top bars and listening. The loud steady hum of a strong colony is very different from the sounds of a colony in distress. These “inspections” are very quick and as non-invasive as it gets. Just recently one of the hives “did not sound right”: the hum was noticeably quieter in one part of the nest, with high-pitch buzzes of individual bees that sounded irritated. It turned out the colony was in the early stage of small hive beetle infestation, which could be successfully fixed.

When using conventional frames, you can cover the gaps between the top bars with a piece of heavyweight burlap, or even thick plastic.

Good insulation

Langstroth himself emphasized the importance of protecting bees from the extremes of temperature by making hives of very thick boards or constructing them double-walled with insulation inside. In practice, however, this is more easily said than done, because making multiple boxes double-walled is *much* more complicated



and expensive, and thicker boards add to the weight of the hive.

The horizontal hive – consisting of just one box that you don’t have to lift – can be very easily insulated, once and for all. In milder climates you can simply build the box out of “two-by” lumber which is 1½” thick and offers twice the insulation value of a regular hive. In harsher climates double-walled construction with up to 3” of insulation between the walls is ideal. Another option is to smear the outside of your thin-wall hive with a plaster mixture of cow manure, clay, straw, and ashes. Coated this way horizontal hives overwinter even in Montana.



The advantages of horizontal hive insulation include less honey consumption during Winter, less moisture and condensation, and consequently less disease. More rapid Spring buildup and more efficient cooling in the Summer are other benefits that convinced me to build all my hives thoroughly insulated. And, just as Langstroth promised, the added expense of this protection pays back very quickly: most beekeepers *feed* their colonies in the Spring, but I actually *pull* honey in March – some hives still have over 20 lb of surplus honey after the Winter is over and the Spring honey flow begins.

Fewer hive visits

The prominent French beekeeper Jean Hurpin wrote in his 1941 book *Modified Layens Hive*: “Horizontal hives are wonderfully suited for remote outyards. In the yards that I visit only *once per year*, I always find the bees in excellent shape with the hives full of honey, harvesting which becomes my sole task.” He further describes how he would visit the outyard once a year, in September, pull and extract honey, return empty comb to the colonies, close the hives, and leave them until September a year later.

I found this style of beekeeping so appealing that I made an experiment: installed a small late swarm (about two lb of bees) in a horizontal hive in June, added top bars, and let them be until the following year. Even though the hive was active come spring, *I was getting nervous*: what if they went through all their honey reserves and could starve? I finally opened that hive on the Spring Equinox (March 20), only to find a booming colony with 12 deep frames of built comb, lots of bees, robust brood going, and . . . over 20 lb of capped honey still left after the Winter was over. And this – without foundation, feeding, treating, or managing the hive in any way: just a two lb swarm placed in an empty box nine months earlier.

Of course I usually open a hive more than once per year, but it still holds true that with their large internal volume the horizontal hives can be managed less intensively. Fewer visits required means you can place them in small outyards with lower density and less concern about robbing or the spread of disease.

One honey harvest per year

My horizontal hives hold 30 deep frames, or more. This means the box has enough volume to hold all the surplus honey I can typically expect from stationary hives in my location. This way I can postpone my honey harvest until the end of the season – in my climate (south central Missouri), October or November. To me, it has many advantages.

First, by that time there are significantly fewer bees in the hive, they are not as active, and harvest can be done with minimal disturbance. As the bees have started to coalesce in their brood chamber preparing for the Winter, the honey frames away from the nest can be pulled barely encountering any bees.

Second, by that time all honey is fully ripened and capped. No need to put buckets of liquid nectar into a garage and run a dehydrator for a few days to get water content down to the legal definition of honey! The bees have done it for you.

Third, by that time you know exactly how much honey you can harvest without compromising the colony’s Winter reserves. There is none of the uncertainty involved in harvesting honey in mid-season (here, July): you pull too much, then there’s a drought in August and September, and you have to feed sugar syrup heading into Winter. I never feed my bees and they have honey reserves in the hives at all times.

A similar approach can be practiced in a hive of any model, but I love the convenience of adding all frames in the horizontal hive box by the beginning of the main flow, and not worrying about it until harvest time.

Stationary, naturally

My son Yarosvet once offered me a riddle: “What is it: huge and tall, in the middle of the woods, and spins all the time?” “I don’t know!” I threw my hands up. “That’s a *bee tree*.” “But bee trees don’t spin!” I protested. “Surely they rotate with the rest of the Earth,” observed my four-year-old beekeeper.

For all practical intents and purposes, however, we view bee trees as stationary, and I like the fact that all my horizontal hives are stationary as well. I know that many will actually view it as a limitation, not being able to easily migrate with horizontal hives, but to me it is an advantage.

For one thing, I like to be rooted in one place, and would not enjoy moving my hives around even if I could (I now know they spin with the Earth, though). But, more importantly, having them stationary really encourages me to plant flowers and trees and enhance local nectar resources, making this space beautiful – instead of putting the same energy in hauling the hives.

Having my hives stationary also produces honey that truly reflects the flavor of this locale, with hundreds of species of Ozark wildflowers contributing to its richness. Yes I know I could increase the *quantity* of honey by moving my hives, but what about the *quality*?

Large hive volume for natural swarm control

One of the natural mechanisms that trigger swarming is congestion in the brood nest. The hive becomes crowded as more and more young bees emerge. This slows down the circulation of queen pheromone, which in turn stimulates construction of queen cells. Spacious nests, on the other hand, have been shown to discourage swarming – see, for example, Winston’s *The Biology of the Honey Bee*.

My horizontal hives have a constant volume of three deep Langstroth bodies at all times, alleviating congestion and discouraging swarming. I do not practice any form of swarm control, but even without it, less than half of the colonies will swarm in a particular season. And those that do – no problem: I catch the swarms into baited swarm traps and increase the apiary. Win-win either way you go.

Lots of empty comb stimulates foraging

In a horizontal hive, a colony would usually start the spring on 10 to 15 deep frames. A first-year colony started from a swarm would initially occupy fewer than 10 frames. In both cases the hive is gradually expanded horizontally with addition of dry comb and foundationless (or foundation) frames. Once the colony has built up and the strong flow begins, I add more empty comb – all I have on hand. The horizontal hive layout allows you to add more comb without making it any more difficult for the bees to regulate microclimate in their nest. The bees are able to expand to the lateral frames at their own pace, and presence of plentiful empty comb stimulates foraging (see, for example, Tom Seeley’s *The Wisdom of the Hive*).

Some people are concerned that bees may not expand laterally nearly as well as in a vertical hive. But horizontal hives have been in use for over four thousand years, and in fact one of the most notable beekeepers in the 17th century, John Worlidge “found that colonies given extra space by adding width rather than height grew larger and produced more honey” (Eva Crane, *The World History of Beekeeping and Honey Hunting*, p. 409).

No queen excluders needed

How do you keep the queen out of the honey in a horizontal hive: is there a queen excluder inserted between the frames? The good news: none is necessary. In a horizontal hive the brood chamber will typically be by the open entrance – the fact already known in Ancient Egypt. Having the brood nest by the entrance makes it easier to ventilate and regulate the nest’s temperature and CO₂, and this is where nectar and pollen arrive to feed the brood.

In all my hives the brood is on the frames close to the entrance; the honey is stored farther from the entrance, where the frames never have brood. Besides, I am aided in this by the timing of honey harvest: even if there were any brood cells on these combs, by October all this brood would have long emerged.

Finally, you can use the time-tested method and increase frame spacing in the honey section to 1¾” as additional assurance that no brood will be raised there.

Cycling out old comb by shifting the entrance

You can cycle out old dark comb from the brood chamber without even opening it: simply shift the entrance position to the opposite end of the hive early in the season. The brood chamber will move there over the summer, so by the fall you can harvest the dark comb from the former brood chamber end without disturbing the colony.

Duplex for better wintering

Most first-year colonies that start from afterswarms in June do not outgrow half of the hive box (15 deep frames) in their first season. So you can insert a division board and hive two small colonies in one box. This makes more efficient use of equipment and the small colonies sharing their heat Winter excellently.

Splits are easy

By the same token, horizontal hives are convenient for making splits: move some brood frames to the opposite end, insert a division board, and open one more entrance.

And yes you can use a two-queen system in a horizontal hive as well. In fact, many beekeepers in Eastern Europe and Russia use a split to requeen a horizontal hive without finding the queen or buying a new one. A colony is divided in two and the split is allowed to rear an emergency queen. After the virgin queen mates and starts laying eggs, the two colonies are reunited and in most cases the young queen will win it over the old.

Storage of empty comb

In the Winter in cold climates the empty section of the hive can be used for storing empty comb. Temperature in this empty section, behind the division board, would be low enough to prevent any wax moth damage.

Cheap and easy to build

Because the horizontal hives consist of a single box, they are very easy to build. Even the “deluxe” version I make with thick walls, insulated peaked roof, and screened bottom costs under \$100 in materials and requires eight work hours to complete. But the “primitive” version can be as simple as a “two-by-12” board cut into four sections and assembled on screws.

You also have greater choice of materials for hive construction. For example, you can use very thick locally milled lumber for the walls without worrying about the added weight: once installed in the apiary, it is not going anywhere. And because the hives are not stacked one on the other, you don’t have to be meticulous about the measurements either: one hive can be three feet long, and another one four feet.

Hive stand included

Screw four legs onto the hive body, and you have your long hive on a nice stand. Not only this looks pretty and brings all the frames to the comfortable working height, but it also completely eliminates the problems with raccoons, opossums, and skunks. The legs can be made mouse-proof by wrapping some aluminum around them (either flashing or old soda cans). But even without this additional protection I never had mice climb into the hives, and I do not use mouse guards.



Having your hive on stand, some 20" off the ground makes mowing in the apiary problem-free. I never get attacked even when mowing straight in front of the hives. What would you give for being able to mow your beeyard without a bee suit on a hot summer afternoon?

Large footprint – no tipping over

With the legs attached, the hive can have a footprint of some 16 square feet – over six times that of a Langstroth. This makes horizontal hives very steady, immune to tipping over by wind, cattle, wildlife (except bears), children, or due to an accident.

One box per hive – less disease

In a horizontal hive, there are no boxes that are transferred from one hive to another, thus limiting the spread of disease.

Versatility – your choice of top bars or frames

The horizontal hives I use can accept both 19" top bars and standard frames (both foundationless and with foundation), and they are interchangeable. Having the ability to run top bars and frames in the same box can help a beginner beekeeper to try both, compare, and make a choice.



Streamlined management

Horizontal hives are easy to manage and are beginner-friendly. For example, you can achieve good spring buildup without much experience or skill. In a vertically stacked hive, knowing the right time for adding more space comes with a lot of experience: add an empty box too early and you chilled the brood, add it too late and they run out of room and start swarming. Horizontal hives are more forgiving, as adding frames laterally does not alter the nest's microclimate as dramatically as adding a new box on top.

Positive feed-back

I do not feed my bees, but for those who do, the horizontal hive offers a very simple and secure way to feed. No special feeder necessary: you can use a gallon milk bottle with the top cut off, or any similar container. Put it in the empty part of the hive, and cover the liquid with a layer of woodchips to serve as floats. The feeder is added laterally with minimal disturbance, and because it is inside the hive away from the entrance, the risk of robbing is minimal.

Gable roof – practical luxury

I now build all my hives with peaked roofs. Not only they look pretty, on the horizontal hive they are very practical: the overhangs effectively shade the walls during the midday heat in the Summer, preventing overheating, and thoroughly protect the hive box from the rain, so it will last a very long time even if left unpainted. But paint we do!

Horizontal is beautiful

The Langstroth hive boxes change their position in the stack, even go from one hive to another. Your options for decorating them are limited: you need a uniform ornament that will look good in any stacking order and on any hive.

With the horizontal hive there is just one box that stays there so let your creativity run loose. This helps bees orient and find the right hive, and makes a good impression on your guests. We were once offered \$500 for the front piece of one of our hives. The buyer – a beekeeper from Oklahoma – first displayed it at his workplace to the envy of his co-workers and then hung it in his bedroom. If honorable people decorate their bedrooms with your hive artwork, imagine this beauty streaming at you from

dozens of hives at a time. A walk around your beeyard doubles up as a visit to a fine art gallery. You can even sell admission tickets (I do).

And bees living in beautiful hives make better honey. I am fully confident about that!

Fewer stings

Bees in horizontal hives are more gentle and less prone to attack. Both visitors to my apiary and other horizontal hive beekeepers consistently remark on that. My children once decorated the front wall of an active hive without any protective gear and no fear of being stung. I attribute it to the low-disturbance management facilitated by the horizontal hive layout. A neighbor beekeeper said after a visit to my beeyard: "Leo, I really did not want to like your hives... but I did!"

OK, by the sound of it, everyone should be switching

over to horizontal hives! I certainly do not advocate that. Like any hive model, horizontal hives have their disadvantages. A major one is that for a sizable operation (I would say over 10 or 20 hives) there is much to be said for the convenience of managing your hives and harvesting your honey "one-box-at-a-time" as in a Langstroth as opposed to "one-frame-at-a-time" as in a horizontal hive. But I've seen hobby beekeepers unload half of the frames from a honey super at harvest anyway, as the full box is too heavy for them to carry.

Another disadvantage is that solidly built well-insulated horizontal hives are large and expensive to ship, and are not available from big catalog companies. The solution is to make them ourselves, or to give business to our local woodworkers. For those curious to give horizontal hives a try, check out the plans at www.HorizontalHive.com. **BC**



Oregon Grown Queens

Producing acaricide free Survivor Stock since 2000

Selecting for productive, mite, pest, & disease tolerant bees..

Double Vetted and Fully Mated Mated Queens for Higher Acceptance Rates and Longevity.

Queens, Nucs and Pollination.

For more information please contact Old Sol Apiaries at www.oldsolbees.com or call **541 582 2337**

JLR Machine and welding services

Home of the beehive box joint cutter

John Rohrer 330-421-4029

Lester Rohrer 419-706-5842

Wakeman, Ohio

johnnyb@jlr.com



BL PLASTIC CONTAINERS

FOR ALL YOUR PACKAGING CONTAINERS FOR PACKING HONEY (No orders too Large or Small)

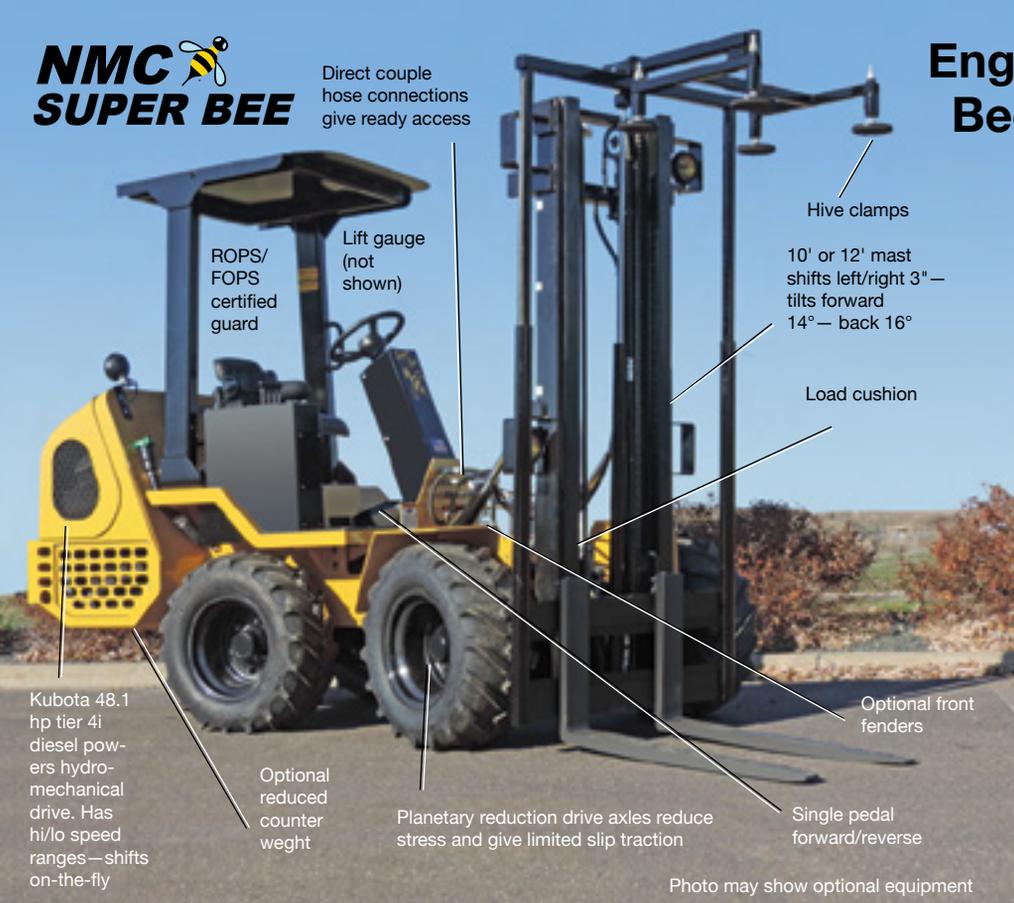
We Built Our Business On Service, Quality & Dependability.

515.266.6112 • FAX 515.266.1112

sales@blplasticciowa.com

www.blplasticciowa.com

1425 Metro East Drive, Unit 109
Des Moines, IA 50327



NMC SUPER BEE

Engineered for Beekeepers...

- Direct couple hose connections give ready access
- Hive clamps
- 10' or 12' mast shifts left/right 3" — tilts forward 14° — back 16°
- Load cushion
- Optional front fenders
- Single pedal forward/reverse
- Planetary reduction drive axles reduce stress and give limited slip traction
- Optional reduced counter weight
- Optional front fenders
- Single pedal forward/reverse
- Photo may show optional equipment

...with emphasis on smooth...

...Smooth turns with articulated steering...

...Smooth transport with Swinger frame oscillation...

...and smooth travel with hydrostatic over mechanical drive.

Perhaps it's time to evaluate a straight mast fork truck — professionally engineered to work in your apiary.

Contact: Mark Brown
800-656-6867
www.nmc-wollard.com

Kubota 48.1 hp tier 4i diesel powers hydro-mechanical drive. Has hi/lo speed ranges—shifts on-the-fly

ROPS/FOPS certified guard

Lift gauge (not shown)

Screened Bottom Boards

There's Always Something New To Learn

— Ross Conrad

Despite having worked six years for a commercial beekeeping outfit with over a thousand hives, and having kept bees for over twenty years, I am still constantly learning and seeing new things related to bees and beekeeping. For instance, this Summer for the first time ever, I saw a hive of bees building comb *under* the bottom board of their hive. I took photos of the hive since I had never seen a colony do such a thing before. I thought it was just a fluky thing, but lo-and-behold, later in the Summer I saw another hive doing the same thing. So what's going on here?

In both cases, the hives in question were outfitted with a screened bottom board. The screened bottom board was first utilized widely by researchers who wanted to test various treatments for *Varroa* mites. It is tricky business trying to develop a pesticide that will kill a mite living on a bee, without also killing the bee. The researchers reasoned that by replacing the solid wooden bottom board with a screened bottom board, mites that die and fall to the bottom of the hive as a result of the treatment will fall through the screen. Researchers could then collect the dead mites, count them and determine the efficacy of the treatments they were testing. When conducting such trials properly of course, control hives have to be outfitted with screened bottom boards as well, but the controls are not given the mite treatments. It was during such trials that researchers observing control hives during trials discovered that a significant percentage of mites in a hive simply lose their grip and fall to the bottom of the hive during the course of the year whether the hive is treated for *Varroa* or not. As a result, many beekeepers now use screened bottom boards on their hives. It is the least labor intensive, and low cost method of removing a relatively small percentage of mites from a hive (approx. 20%) year-round without adding to the colony the additional stress that can be caused by the chemical contamination most *Varroa* treatments leave behind. While a screened bottom board is not enough on its own to keep bees infested with *Varroa* alive for very long, it can be part of a successful mite mitigation approach (see *Bee Culture* June 2015, Bermuda Bees or Bust).

Since the use of screened bottom boards in hives became commonplace, beekeepers have discovered

that screened bottom boards can provide improved hive ventilation, helping to keep the hive cooler in the Summer, and aiding in the prevention of moisture building up in the hive during Winter.

Screened bottoms that are left open to the ground also eliminate the need to clean out the bits of pollen, beeswax and propolis, which along with the occasional mite and other hive debris can build up over time underneath the screen. When this happens it can attract scavengers such as wax moths and small hive beetles unless it is cleaned out regularly by the beekeeper.

In the case of the two hives observed this past season, they both were outfitted with screened bottom boards that were open to the ground, and they both were elevated above the ground high enough to provide room for the bees to build and maintain comb underneath the screen. Another commonality was that both hives were strong, healthy hives that were allowed to experience very overcrowded conditions.

In the first case the hive belonged to the widow of a beekeeper who recently passed into spirit and despite her best intentions, the hive was not being checked on a very regular basis. In the second case, I split a hive into a five-frame nucleus colony and inadvertently transferred the old queen into the nuc. When I checked the nucleus colony 30 days later, it had completely filled up the three additional frames of drawn comb and two frames of foundation that I had used to fill out the rest of the space in the 10-frame hive body that housed the five-frame nuc, and the colony had built burr comb all over the underside of the inner cover and filled the burr comb with honey. To make matters worse, I had run out of supers of drawn comb so I had to place a super of foundation on top of this overcrowded hive. This occurred right around the time the rains stopped coming regularly in Vermont's Champlain Valley, causing the honey flow to slow to a trickle. As a result, the colony never drew out the foundation, and so even though the hive had room to expand, the foundation was not "usable" space for storing honey, pollen or raising brood, and this exasperated the overcrowded conditions.

The first question that came to mind when I discovered each of these hives was: is this a swarm with a second queen or an extension of the colony above? And if it is

an extension of the hive above, do the combs below the bottom board contain brood? A close inspection revealed that in both cases, the combs were filled with honey and bee bread, with only the occasional single developing cell of drone brood. These isolated brood cells were apparently laid by a worker bee who's ovaries became active due to lack of exposure to the queen and brood pheromones above the screen. This indicated that in both cases, the combs below the bottom board were an extension of the colony above. It was a relief to find no significant amounts of brood below the screens which meant that the queens were staying put inside their respective hives where they belonged.

Here in the northeast U.S., bees that are not enclosed within a protective cavity and are exposed to the biting wind, blowing snow, sleet, rain, hail and whatever else winter decides to dish up, do not stand a chance of surviving. Thus, I had to remove the comb under the bottom board and get the bees back into the hive above. I first tried replacing the bottom board, and moving the original bottom board, complete with comb, bees, honey and pollen some distance away from the hive. I figured the bees would find their way back to the hive, and rob out the honey in the combs left on the original bottom board bringing it back to the hive with them. Unfortunately, it was not as simple as that, for when the bees returned to the hive, they chose to go underneath the new bottom board that had been installed and started building comb under there again.

Well I figured, why fight them? If the bees want to be under the bottom board, I would try to work with their natural tendency rather than against it. This time I placed an empty shallow super of drawn comb under the replacement bottom board so that the bees had someplace to go when they returned to their favorite spot underneath the hive. In late Fall when the cool weather returns, I plan on removing the shallow super from under the bottom board. If the super is full of honey I can either harvest it or use it as Winter feed for the hive, and if it has significant amount of honey and pollen stored in the combs but also has significant amounts of empty comb, I plan on placing it above the screened bottom board but leave it on the bottom of the hive. This way the rest of the hive will have easy access to the honey and pollen in the combs and can move the food around the hive as needed when temperatures are favorable to do so. I never like to leave empty combs above the brood nest in fear that the cluster will eat their way into a corner where there is no honey and starve, unable due to the cold to reach the honey stored in other parts of the hive.

Before the advent of the screened bottom board, the scenario as described above would never have occurred. However, as is the case whenever a new technology or method is introduced, unexpected consequences can result – just another educational experience in my ongoing adventures with the bees. **BC**

Ross Conrad is the author of Natural Beekeeping: Organic Approaches to Modern Apiculture. Look for Ross at the Carolina Farm Stewardship Association conference in Durham, NC November 6-8, 2015, and at the Florida State Beekeepers Association annual conference at the Omni Amelia Island Plantation Resort, Fernandina Beach, (near Jacksonville, FL) November 20-22, 2015.



Bees will do the darndest things.



Beautiful comb . . . just not very easy for the beekeeper to work with.



Rather than try and force the bees to do what I wanted them to do, I let them do what they wanted but do it in a super with frames of comb that can be easily moved up above the bottom board before Winter.

SuperDFM - HoneyBee

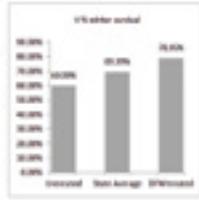
ALL NATURAL, BEE PROBIOTICS

Inhibits chalkbrood
Inhibits nosema

 **MADE IN MILWAUKEE, WI, USA**

SuperDFM - HoneyBee suppresses pathogens from establishing within the bee's gut.

SuperDFM - HoneyBee populates bee's intestines with beneficial bacteria to restore microbial flora.



Contact our distributors for more info:

Brushy Mountain

www.brushymountainbeefarm.com | 1-336-921-3640

Mann Lake Ltd.

www.mannlakeltd.com | 218-675-6688

Glory Bee Foods

www.glorybee.com | 800-456-7923

Betterbee

www.betterbee.com | 800-632-3379

**BETTER DIGESTION
MEANS HEALTHIER BEES**



Thymol.net

- Buy Online At www.Thymol.net
- 100% Pure Food Grade Thymol Crystals
- Free Shipping In The Continental US!



1 - 4 lbs	\$24.00/lb
5 - 9 lbs	\$18.00/lb
10 - 24 lbs	\$16.00/lb
25 - 49 lbs	\$14.00/lb
50+ lbs	\$12.00/lb

Common Uses: Thymol naturally occurs in many essential oils. It is used as a flavorant in many foods, candies and personal care products.

Thymol.net

"Permaculture helps you transform your home, garden and community, save money and so much more besides."

**TRY A
FREE
COPY**



VIEW HERE
www.exacteditions.com/read/permaculture

nozevitTM Plus

**Your partner in helping maintain the
intestinal Well-Being and Integrity of
your honeybee Colonies**

Contains:

- All Natural Plant Polyphenols
- Phytonutrients
- 3 Essential Oils
- Complete Amino Acids
- Vitamins and Minerals



**NO GMO
or HFCS!**

AS LITTLE AS \$27 PER USE.

**Simple, Effective and Economical.
Apply early Spring and late Fall
via drench or in feeder. Add to protein patties.**

 **Dadant.com**
 **eKoBeekeeping.com**

For more information - (907) 727-8200

Persimmons For The Garden

Connie Krochmal

Persimmons are excellent additions to the bee garden. Very suitable for hedges and espalier, the handsome, ornamental, picturesque, small to medium sized trees provide bees with nectar and pollen. Members of the ebony family, most persimmons are native to the tropics.

The Latin genus name comes from the Greek and means “grain of Jove.” Worldwide, there are between 200 and 475 species.

Bees work persimmon flowers from sunrise to sunset throughout the day. Typically, most trees bloom for about two weeks or so. They provide a very heavy, somewhat irregular nectar flow. Due to the flower shape, the nectar is unaffected by rain. The trees can bring an early honey crop.

Eaten fresh, frozen, canned, and dried, persimmons are used for preserves, breads, pudding, wine, beer, and vinegar. The roasted seeds are made into a coffee-like beverage.

General Description

Sometimes forming thickets, the trees feature interesting branch patterns and deeply furrowed bark, resembling alligator hide.

About four to six inches long, the shiny, leathery, alternate, deep green leaves can vary in shape from broadly ovate to lance-like. Depending on the species, they turn purple, yellow, or red in the Fall.

The lovely, waxy, scented blossoms can be bell, urn, or cup shaped. These contain corollas with three to seven lobes. The male and female flowers usually open on separate trees, mostly on old wood. While the former are solitary, the latter typically form trios on small, axillary clusters.

Sometimes shiny, the fleshy, juicy fruits are large berries. These contain a number of large seeds.

Growing Persimmons

Pollination is generally beneficial even when a tree is known to be self-fruitful for this leads to a better fruit set and larger fruits. This also prevents premature fruit drop. Bees are primarily responsible for pollination with some wind pollination occurring.

With a slow growth rate, all persimmons are easy to grow. Sometimes planted in tubs, Asian persimmons are suitable for shrub borders. Persimmon trees are generally planted during the Fall or Spring. Container-grown and balled-and-burlapped plants are more likely to survive transplanting.



Many persimmon varieties are available. Named cultivars usually bear fruits at a younger age and produce better quality fruits than seedlings. Propagation is by budding, grafting, layering, root cuttings, and seed.

Before choosing a variety, become familiar with its mature size, hardiness, and pollination needs as well as its flowering and fruiting habits. Generally, Asian trees are planted 15 to 20 feet apart while the native species need 35 feet between plants.

Intolerant of salt, persimmon trees can withstand heat, floods, wind, neglect, and typical city

conditions. Full sun is generally best.

Although these trees grow faster in rich soils, the plants thrive in most soil types, provided it is reasonably well drained. American persimmon adapts to more soil types than the Asian. Disliking soils rich in boron, Asian persimmons prefer a moist, medium textured, rich, well drained soil. The trees tolerate wetter conditions than most fruit trees.

Water the trees as needed until they're well established. Although mature trees are generally drought tolerant, their fruits can drop during dry weather. Weeding is also recommended.

Generally, most persimmon trees require little pruning, especially

once they're bearing fruits. Pruning is usually restricted to controlling the tree's size or removing dead, diseased, and damaged branches. Prune any suckers that develop.

Thin the fruits on Asian persimmon trees to one or two per shoot or ten inches between fruits. This helps to minimize alternate bearing. When heavily laden with a heavy crop of fruits, the branches often need a support.

Top dress the trees with compost any time of the year. Mulch is beneficial, especially during the Winter. Fertilize only if the trees fail to grow a foot a year.

Persimmon trees generally experience minimal insect and disease problems. The American persimmon is sometimes killed by persimmon wilt, a fungus.

Recommended Persimmon Species for Bees

At least four species of persimmons are either native or cultivated in the U.S. These include the following.

American Persimmon (*Diospyros virginiana*)

This occurs from New England, New York, and the Atlantic states to West Virginia through the Midwest and Great Lakes southward to the Everglades and Mississippi westward to Missouri, Kansas, Arkansas, and Oklahoma into Texas and the Colorado River Valley. Often suckering, the trees are less common in the North than elsewhere. They're found along fence rows and highways as well as in old fields, dry woods, strip-mined areas, eroded wastelands, slopes, and clearings. Sprouts can arise from burned stumps.

Suitable for the dry West, American persimmon is the hardiest species. A long lived tree that can reach the century mark, this thrives in zones five through nine.

The attractive tree develops a narrow, somewhat rounded, symmetrical crown and pendulous branches. It is usually 30 to 60 feet in height, depending on growing conditions. However, the plants have reached 90 to 100 feet with a 30 foot spread in forest settings. Seedlings grow more slowly than cultivars.

The glossy, thick foliage is five inches long and two inches wide. Usually ovate or oblong, this emerges late in Spring.

The partially concealed, waxy, heavily scented, fairly small, inconspicuous blossoms typically begin opening from May to June in most locations. These can be white, greenish-yellow, or whitish-green. Males are less than ½ inch long. With lobed, yellow corollas, the females are slightly larger.

Quite tasty when ripe, the smooth-skinned fruits are richer flavored and smaller than those from Asian trees. Variable in shape, they're typically plum or tomato-shaped with deep orange to yellow skins blushed with red. Usually an inch across, their size varies from ¾ inch to two inches in diameter. These taste astringent until they're fully ripe. Frost isn't essential for ripening to occur. Most persimmon fruits contain one to eight seeds.

Fernando de Soto was probably the first European explorer to see the trees when he traveled on the Mississippi River in 1539. Some early attempts were made to find superior varieties. Commercial interest in American persimmon dwindled once

the Asian was introduced.

Outstanding or superior American persimmon varieties include Meader, Early Golden, Garretson, John Rick, Ruby, and Yates.

American persimmon is an important source of nectar and pollen in the South and Southeast from Virginia into the Carolinas westward to the Plains, Missouri, Arkansas, Oklahoma, and Kansas. It is a major nectar source in at least five states and of some value in 22 other states.

The nectar and pollen help to build up the colonies. This tree provides an early honey crop, usually about 75 pounds. The honey is light amber to amber and mild flavored.

Asian persimmon (*Diospyros kaki*)

Apparently native to Asia, Asian persimmon has been grown in Japan for at least a thousand years. These are also widely cultivated in India and China.

The trees reached the Mediterranean region about a century ago and were introduced to Europe in the late 1700s. Hardy in zones seven through 11, they arrived in America beginning in the 1850s. At least 25 to 85 cultivars were introduced over a period of years.

Although thousands of cultivars are likely available worldwide, far fewer can be found in America. Production in the U.S. has fluctuated over the years, averaging around 3000 acres nationwide. Much more popular than the native species, the long lived Asian persimmon is a wonderful addition to the home landscape.

Attractive year-round, this very handsome, upright, low-branching,

rounded, compact plant features wide spreading, rather fragile outer branches. Smaller than the native species, the Asian persimmon tree is usually ten to 20 feet tall. Under ideal conditions, it has reached 30 to 40 feet with a matching width.

Variable in shape, the large, alternate, thick, leathery, deep green, shiny leaves are three to eight inches long. They're somewhat hairy underneath. Foliage in the Fall can be yellow, red, or orange. The leaves drop earlier than those of the American persimmon.

Opening on new wood during the Summer – usually in June – the small blooms, ½-inch wide and ¾-inch in length, can be light yellow or whitish-yellow. Blossoms can be male, female, or perfect. In some cases, a single tree can bear all three types. The females feature whitish-yellow petals. The males appear in trios.

The shape of the fruits as well as their skin and flesh color, and size varies considerably, according to the variety. They can resemble a plum, tomato, or heart.

Asian persimmons usually ripen in October or after the leaves drop. They vary from about 1½ to four inches in diameter. The thin, smooth skin is often covered with a whitish bloom. This can ripen to orange, orange-red, yellow-orange, or yellow. Pollinated fruits can have eight to 10 seeds. The flesh ranges from red to yellow-orange, brownish-red, or orange.

They're grown commercially in Florida and California and to a limited extent in parts of Texas, the southern states in the "Cotton Belt," and along the Atlantic to

Asian Persimmon Blossom



Connecticut and Pennsylvania. Outstanding varieties include Fuyo, Fuyu, Saija, Ichikikeijiro, Great Wall, Hira-tanenashi, and Surugu.

Date Plum (*Diospyros lotus*)

Also known as false lote-tree, this is native from North Africa to Asia Minor. Although its origins are somewhat unclear, this has long been cultivated, mostly as an ornamental in temperate Asia – especially Japan, China, and Korea – to the Himalayas and the Mediterranean region. This was mentioned in the writings of Homer.

Cultivated in the West since 1597, date plum is suitable for zones six through 10. It is similar to American persimmon. This round headed, spreading tree is usually 30 feet in height and 20 feet wide. Given optimal growing conditions, it can be 40 to 45 feet tall.

The young branchlets are hairy. Fuzzy on the upper surface, the shiny foliage, five inches long, varies in shape.

The female blooms reach 1/3 inch in length, while the males are slightly shorter. Opening mostly in June, these emerge from late Spring to early Summer. They're whitish-green or green with reddish tinges. Bees eagerly work these flowers for nectar.

About the size of a cherry, the globe-shaped, edible fruits are eaten fresh and dried. Initially yellow, they ripen to black, purple, or brownish-blue. These usually contain flat, brown seeds.

Date plums taste sweet and astringent at the same time. The flavor is somewhat like that of a date. They're best eaten when dead ripe.

Texas persimmon (*Diospyros texana*)

Also called Mexican or black persimmon, this deer resistant tree or shrub is native from Central, Southern, and West Texas to Mexico. Hardy to zone seven, it occurs along ravines and stream banks as well as river valleys, woodlands, prairies, canyons, and dry, rocky mesas.

Often featuring multiple, straight trunks, this lovely upright tree with gorgeous, silvery, peeling bark develops a narrowly rounded crown. The small to medium sized plant ranges from 10 to 40 feet in height and about half as wide, depending

on growing conditions. Hairy when young, the stout branches are often crooked.

The leathery leaves are up to two inches long and an inch across. Often semi-evergreen to evergreen in warm climates, these can be hairy on both surfaces. Variable in shape, they're typically fairly broad towards the center.

The small, creamy white, five-lobed blossoms develop in April when the leaves have partially unfurled. Featuring long, creamy white petals with fringed margins, the male blossoms form hairy, drooping, slender clusters. With longer petals and larger lobes than those of the male flowers, the females open either singly or in pairs.

The small, edible, cherry-like, hairy, soft fleshed, one inch fruits ripen to black. With a melting texture, Texas persimmons taste very sweet. They're eaten fresh and dried. In the Rio Grande Valley, these have been used to dye sheep skins.

Adapted to most any soil type and pH level, Texas persimmon dislikes high moisture levels and high humidity. Tolerant of drought once it is well established, this native species prefers full sun or partial shade.

Texas persimmon is an important nectar source in the state. This plant can provide a good honey crop. **BC**

Connie Krochmal is a writer and a beekeeper in Black Mountain, South Carolina.

For Your Queen Needs Call

**Queen Cells Available –
Shipped By UPS**

MIKSA HONEY FARMS

David & Linda Miksa
13404 Honeycomb Rd. • Groveland, FL 34736
Ph. 352-429-3447
Email mikсахf@aol.com



SELBY APIARIES

CHICO, CALIFORNIA

URBAN BEEKEEPERS AND GARDENERS!

**Mini-Hive Garden Pollinator
Italian & Carniolan Queens Available
Package/Bulk Bees**

NOW ACCEPTING ORDERS - CALL TODAY!

Toll Free:
1-855-374-6639 selbyapiaries.com

HIVE REPAIR MADE EASY

Do It All With FIXIT®!

USE FOR CRACKED, CHIPPED OR ROTTED FRAMES,
PATCH HOLES, RE-BUILD CORNERS, MORE!
FIXIT® WORKS GREAT ON WOOD, METAL,
FOAM, PLASTIC AND MORE!

- SAVE MONEY REPAIRING YOUR HIVES!
- 100% SAFE FOR YOUR BEES!
- PERMANENT, SELF-HARDENING - WATERPROOF
- EASY TO USE, BLEND & SMOOTH
- 2 HR. WORKING TIME
- HARD & DURABLE, GREAT ADHESION
- NO SHRINKING/CRACKING
- SAND, FILE, CARVE, & DRILL
- AVAILABLE IN 5 COLORS

WWW.AVESSTUDIO.COM



BEFORE

AFTER



ORDER NOW:
1-800-261-2837

ITEM SHOWN: FIXIT® 1 LB. \$20.00

ASK ABOUT OUR
AVES SAFETY SOLVENT
FOR SMOOTHING
& CLEAN UP.
ALSO GREAT FOR
WAX REMOVAL!

AVES MANUFACTURERS OF FINE CLAY & MACHE
PO Box 344 RIVER FALLS, WI 54022
MADE IN THE U.S.A.



The leading honey & food lab since 1954
ISO 17025 Accredited

Adulteration | Traceability | Residues | Authenticity

- Antibiotics (Fluoroquinolone, Nitrofurantoin, Chloramphenicol, Carbendazim)
- Aflatoxin Analysis – Chemical Analyses
 - Microbiological Analyses
- Pesticide Analysis – Pyrrolizidine Analysis
- Pollen Analyses – Specific Testing for Honey

www.qsi-q3.de

Quality Services International GmbH, QSI | Bremen | Germany
info@qsi-q3.de | +49-421-594770

Tentamus North America | Illinois
Lauren Fleming | lauren.fleming@tentamus.com | (630) 488-7434

Columbia Food Laboratories | Corbett, Oregon
info@columbiafoodlab.com | (503) 695-2287



New World Carniolan Bees & Queens

We select for hygienic behavior, honey production, mite resistance, and gentleness.

STRACHAN APIARIES INC.

"Honeybees are the backbone of agriculture"

2522 Tierra Buena Road (530) 674-3881
Yuba City, CA Fax: (530) 674-5802
95993-9654 Orders Only: (800) 368-3881

Website: www.strachanbees.com
Email: orders@strachanbees.com

Now accepting orders for 2016



For all your
Candlemaking needs



E.H. THORNE (Beehives) LTD.
BEEHIVE BUSINESS PARK, RAND, LINCOLNSHIRE, ENGLAND, UK
Tel: +441673 858555 sales@thorne.co.uk www.thorne.co.uk
Like us on Facebook www.facebook.com/E.H.Thorne
Follow us on Twitter @ThorneBeehives



Save Money
Pumps and Spinners



2" Gear



3" Progressive Cavity



Cappings Spinner

Buy Cowen

www.cowenmfg.com 800-257-2894

It's Your Club - Do Something

Ann Harman

Dogs are an interesting group of animals. With appropriate rewards they can be trained to do many things. Some breeds inherently do things. The retriever wants to carry something (mine felt it his job to carry the mail up the long farm drive). A beagle will intently follow the trail of a rabbit, for miles, and then forget how to get home. The Border collie is dedicated to herding, normally sheep, but lacking those will herd children, horses, chickens, cows. However, a large group of dogs prefer to snooze in the sun, soaking up the warm rays.

Well, dogs, in general do not get along with bees. However I thought about their attributes when the East Cupcake Beekeepers Association was getting ready to hold the annual elections. The President had served two terms and was required to step down. Now a new President needs to be nominated and elected. Frequently a Vice-president was elected to that position in order to step into the Presidency.

Sometimes they do and sometimes they don't. Usually there is no term limit on Secretary and Treasurer. So those two officers, once elected, can continue for years and years. Actually in some small clubs, not being regulated by Bylaws, the President and Vice-president can continue for years and years also.

In many clubs, especially today, new beekeepers arrive from classes given and the club grows. Yes, some members move away, some lose interest in beekeeping and drop out and some decide a particular club no longer offers very much. The new beekeepers are eager to continue learning but seem to feel they do not know enough to contribute to the organization. Some of these newbees could be the club's leaders in a few

years.

Let's have a look at the various activities of a club, small or large, and how these activities actually get done. Over the year a bee association will have meetings, some with speakers, others with movies, a Q&A session, a field day with open hives, a queen rearing activity, a holiday potluck, a picnic, a field trip, participation in a local event, a honey and hive products show, a bee craft demo, a joint meeting with a neighboring club, and anything else I have not thought of. Some of those topics are wishful thinking in a number of clubs. Everyone hopes for variety but



nobody steps forward to make the wishes come true.

Perhaps it would be better to say *who* gets things done. So often an organization stagnates because too many members 'snooze in the sun.' These members come to almost every meeting, help put a few chairs away at the end and disappear. When asked today to do something, to be an officer, everyone is 'busy.' That can mean with work, caring for children, gardening, appointments, family responsibilities, other organization meetings, teaching, hobbies, television, volunteering, and anything else I have not thought of.

Ordinarily members of a bee club consider the main officers to be the ones who generate and organize the activities – the ones who 'get things

done.' However, one small committee, usually active only once a year, may actually be the real key to the success of a bee association. I'll bet you never thought of it that way.

Whether a bee club is large or small, the Nominating Committee, frequently three people, has an important task – searching the roster of members for ones to ask to run for an office. Actually, finding three people for the Nominating Committee is the first hurdle. The first excuse heard is 'I don't know anybody.' However that person seems to be busy talking to other members before and after the meeting, and during refreshments. Yes, everyone is talking about bees. Any clues about a possible committee member or potential officer could be found in those conversations. In a way, the Nominating Committee is the very important part of the future of the club. The actual time spent during the year by the Nominating Committee is quite small. But the members chosen to be on the election slate will be the guiding ones for the next year

or two. If you are not happy with the direction the club is going, then perhaps you need to say 'yes' to being on the Nominating Committee.

Most clubs have the basic four officers. However some associations may have two Vice-Presidents, giving an odd number of five, better for voting. Some clubs may have two Secretaries – a Recording Secretary to take the minutes, and a Corresponding Secretary to take care of communications. For a large number of members a Membership Coordinator could help the Treasurer keep track of the roster, address changes, delinquent dues. So an Executive Board could actually have as many as seven people. Seven! Where, how is a club going to find all these volunteers? Even a small club could have five on the Board. Imagine the task of the Nominating Committee! Imagine the task of asking someone to be on the Nominating Committee.

One small suggestion to help the Nominating Committee could be having members wear nametags at meetings. For very small clubs it might not be necessary but in a club with 100 members being able to

associate a name with a face could be very helpful.

Are the duties of the officers described in the Bylaws? If so, then it may make it easier to ask a member to run for an office. Does your local club have a newsletter? If so, before the Nominating Committee starts asking members to run for office, put the duties of each office in the newsletter. Then the members will have seen what each officer does. Perhaps it will make the Nominating Committee's task a bit easier.

Do not forget the newbees. Do you realize that no knowledge of bees or beekeeping is necessary to write a check or make a bank deposit of dues money? No knowledge either to take the minutes of a meeting. So a newbie could certainly be elected Secretary or Treasurer. The Nominating Committee needs to keep that in mind and go ahead and approach the newbees. 'I don't know anything about bees yet' just does not fit with being Secretary or Treasurer.

How about those members who suggest 'Let's have a potluck instead of a December meeting with a speaker.' Great Idea. Now is the member who made the suggestion willing to be the coordinator? That's also the problem with other Great Ideas, such as an open-hive field day, a summer picnic, a joint meeting with a neighboring club, and other such activities. It is easy to suggest something that would be of interest and assume that someone else would organize it. Ask the person who made the suggestion to be the coordinator. Variety in programs and activities of a club is vital to the continuing success of the club. But all too often nobody steps up to make the activity a reality.

Go ahead and volunteer for the activity you just suggested. Then don't be afraid to ask other members to work with you. Ask someone to bring plates, eating utensils and Christmas napkins. The club will reimburse the expense. Ask someone to help clean up at the end. Ask someone else to help receive the potlucks. All of these helps are short and simple, but necessary. And it does get a few more members involved. Ask to make a short announcement and thank your helpers.

Perhaps they will continue helping at activities.

Yes, bee clubs, large and small, are staffed by beekeepers who can

be considered volunteers—receiving no pay but are compensated for expenses. For some people, being a volunteer is a reward. Satisfaction comes from just doing a good job and realizing that a better bee association benefits everyone. However, all too often the outgoing President welcomes the new officers and the meeting continues. Has anyone thanked the outgoing officers? Has anyone thanked the Nominating Committee? What about the Secretary who has been in that position longer than anyone can remember?

Recognition can be done in many ways and lets the volunteers know that their time and efforts were valued by the club members. Let's see how a club can say 'thank you.'

How about a Certificate of Appreciation? This blank certificate can be found at office supply stores. Or you can choose from a vast array of bordered blank certificates and with the magic of a computer create such a certificate for the bee association. Choose different borders for different officers. How about giving an appreciation certificate to the beekeeper who has invited the club for a field day for many years. Yes, someone other than the officers please volunteer to do the certificates! It does not take that much time.

So the Secretary is leaving after eight years of taking minutes. Yes, a certificate of thanks is called for. However, the club can certainly afford a gift – a bouquet of flowers, a pair of beeswax candles made by the club's beeswax crafter, a box of golf balls, a gift certificate for a queen bee. Think

of something appropriate and make it a surprise at the Secretary's final meeting.

Although refreshments have either been coffee or soft drinks and cookies, consider making the meeting where the outgoing officers welcome the incoming officers a bit more special than just saying a few words. Get a cake! Get two cakes—one saying Thanks! And another saying Welcome! Everyone gets a piece of cake.

You can have hive tools engraved. Shops that sell trophies usually can arrange this. Start a tradition by presenting every outgoing President with one. The message can be simple; just 'thanks for being President (or other officer) of (name of club).

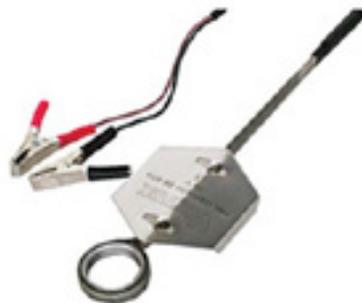
All these certificates and gifts are not really bribes or rewards to get members to do something for the club. They are a way of saying 'thanks' to beekeepers who managed to find time in their busy days to make their local bee club educational and fun. Just as your bee colony needs many worker bees doing their tasks, your bee club needs many worker beekeepers too.

By the way, when you were at a meeting of your bee club, did you happen to see the retriever, the beagle, the Border collie? I know you've met those who prefer to 'snooze in the sun.' For the success of your club, don't be the snoozer! **BC**

Ann Harman has been keeping bees and being involved with bee clubs for many years at her home in Flint Hill, Virginia.

OxaVap.Com

The Source for Mite Killing Oxalic Acid Vaporizers



Featuring the Varroa Vaporizer written in *Scientific Beekeeping* as:
"One of highest ranked models!"

THE BOTTOM BOARD

Jim Thompson

Some of the decisions that a new beekeeper faces is what kind of bottom board should be purchased and what is the purpose of the bottom board? Typically the bee suppliers offer a reversible bottom board which has one side with a 3/8" space above the floor boards and a 3/4" space on the other side. The idea of having a bottom board of this nature is to use the 3/4" side under the supers during the Summer and then reverse the bottom board in the Fall to have the narrow side under the super to serve as a deterrent for mice. This would appear logical, but usually by the time one decides to reverse the bottom board it is too late in the year or the hive is too heavy and so the bottom board remains in one position all year around. Some beekeepers make the decision to keep the narrow side of the bottom board active all year so they believe that the mice will be kept out. What they don't realize is that the bees need ventilation through the hive to help cure the honey and so one should use the 3/4" side. In a hive that is fairly air tight, the bees will fan air into the hive on the right side usually of the bottom board and after the air circulates through the hive, it will be exhausted on the left side. However this pattern



Reversible Bottom Board

of air flow is altered by the drilling of holes in the supers, the insertion of sticks under the inner cover, the staggering of the supers, the cracks from rotting, ill fitting supers, or unusual frame development. When one uses the deep side of the bottom board, they learn that the bees will build mounds on the bottom board to allow the bees to walk up into the hive. A normal mistake that the beekeeper does in the Spring is to scrape off these "ladders to the

combs" and cause the bees to start all over again building the mounds. Thus you should clean the debris off around the outer two or three inches of the bottom board and leave the ladders. When you dump the debris off the bottom board, make sure that you either dump it into a bucket or way behind the hive out of the foot traffic area. The dead bees and other debris make very good fertilizer and if it ends up in front of the hive, you may have a tall grass problem or a wax and propolis build up on your shoes.

Bottom boards can be made from many types of material. Those that are made of plywood soon show the beekeeper that the ply's bubble and/or separate. Particle board and Masonite usually start to disintegrate as the adhesiveness of the glue is lost. Most of the bee suppliers offer solid wood bottom boards and the usual choices are pine or Cyprus. The Cyprus bottom boards are supposedly more rot resistant, but that pertained more to the old growth Cyprus. Therefore one should plan on putting a protective finish on the bottom board. There are many choices as there are paints, stains, and dipping solutions such as gum rosin and paraffin. The bottom board may be coated entirely, but the only thing that a beekeeper should be aware of is to make sure that the finish does not contain any chemicals that are toxic to the bees.

In setting up the hive, you should make sure that the hive is level so the bees will draw the combs in a satisfactory manner. However in the late Fall or early Winter you should consider putting a shim under the back of the hive or tilt the hive slightly forward to allow moisture from condensation to drain. In 1948, Walter Diehnelt invented a bottom board that had the floor boards of the bottom board fitting in an angular dado on the side rails. These bottom boards had the deep side available for ventilation at the front of the hive and the slope for the water drainage. However they never were popular as a

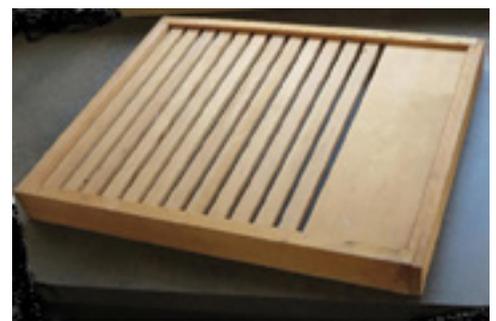
beekeeping item. Perhaps it was due to the complicated angular cut on the side rails or that most hives were supported on the floor boards with concrete blocks thus giving the hive a constant tilt in the wrong direction.

Another bottom board that never became popular was the one way traffic board invented by John Musgrove. A cut in the side rails was made so a bent 1/8" hardware cloth screen could be inserted. The screen allowed the bees to walk out of the hive below the screen, but returning bees would land on the screen and walk into the hive. I don't know why this was never popular, but I suspect that the reduction of guard bees at the front exit and the elimination of guard bees at the true entrance may have been a problem.

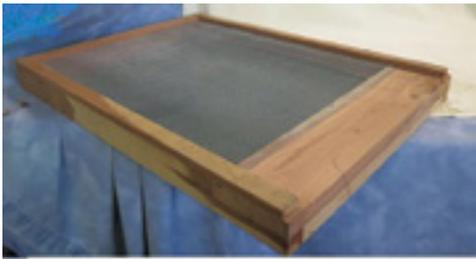


One Way Traffic Bottom Board

The extra deep bottom board that contained a removable slatted rack also never worked out well. The idea behind this was to provide a barrier to prevent mice to go up into the combs, make it dark inside the hive so the bees would draw the combs to the bottom of the frames, and provide an indoor clustering space. All of these ideas have merit, but it overlooked that the ladders to the combs would have to be even taller and now there were two spaces that the bees had to cross to get into the hive instead of



Regular Slatted Rack



Screen Bottom Board

one. Pictured is a regular slatted rack which would sit on top of a bottom board and do essentially the same as the bottom board with a removable slatted rack.

The screened bottom board was an idea that was written about in a *Bee Culture* issue of 1904 to allow bees to have more ventilation in the hive. This idea has resurfaced in recent years to aid in mite detection and some control. Some of the models have provisions to have a slide to allow sticky board insertion and/or stopping the air flow during the cold months. As an experiment, I have placed a hive on cross rails so it didn't have a bottom board and found that the hive did fine. The only problem with this kind of arrangement is that you would have difficulty in moving the hive as you don't have a front entrance to monitor or a way to restrict the bees while you are picking up the hive.

Plastic bottom boards have become popular as they do not rot. However the first ones were slick and the hive bodies would slide off the bottom boards if there was any slope to the hive. Thus small flanges were added to the rails that would fit inside of the supers and that problem was solved. Then it was noticed that because the floor of the hive would bend in the middle if the hive was not supported correctly, so an additional support was placed in the front center of the bottom board. However the addition of the front support interfered with the practice of using a "V" shaped screen when you wanted to move the hive.



Plastic Bottom Board

Many of the commercial beekeepers have special pallets that hold four hives. The bottom boards are built into the pallet. This allows the beekeeper to use a fork lift to move four hives at once. Because the bottom boards are not in direct contact with the ground the rotting issue of the bottom board is reduced.

There are some beekeepers that will permanently attach the bottom board to the hive. Maybe this idea is a throwback to the time when there were hives like the Buckeye hive that had permanent bottoms. Then you got involved in a lot of frame moving. However the fixed bottom may help in situations where one is catching swarms, moving hives, or raising queens. If you are using nucs, the attachment of the bottom board is a common practice.

I have seen the "standard" reversible wood bottom board break and rot out very quickly. The bottom boards just don't hold up to having a ratchet strap wrapped around them, so a beekeeper friend designed a bottom board that will withstand the abuse of moving and sitting directly on the ground. However it



Hellman Bottom Board

is always best to have the bottom board sitting on a stand, pallet, or concrete blocks. This bottom board is very heavy because of the amount of wood that it contains, but the features that it offers outweigh the problems of the "standard" bottom board. The top side rails stop exactly at the edge of the front of the super, so you have some variation in the length of the entrance screen. The front and back cross members are recessed so you have a "hand hold" if you want to lift or tilt the hive. The bottom rails are flush and massive enough to withstand the tension of a ratchet strap. These rails are also recessed to allow the beekeeper to position the ratchet strap once it has passed the cross members. The strap does not come in contact with the truck bed or trailer because of this recess. Many deck screws and water resistant glue is used in assembling



Entrance Reducer

the bottom board to assure that it will stay together.

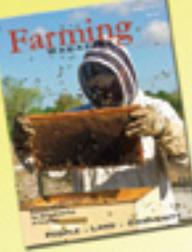
The wood entrance reducer that is available from most bee supply dealers is another piece of the hive that is often misused. It is a $\frac{3}{4}$ " square piece of wood that is $14\text{-}5\frac{7}{8}$ " to $14\frac{3}{4}$ " long and has two notches in it. It was intended to fit in the front of the hive below the front of the super and on the bottom board when the $\frac{3}{4}$ " side of the bottom board is being used. The clearance and weight of the super hold the entrance reducer in place. When the hive is new or the hive is weak, you may want to reduce the entrance so that fewer guard bees are necessary. If you decide to feed the hive by using a boardman feeder, you may slide it into the large notch and still have room for bees to enter the hive beside the base of the feeder. So the notch is against the floor boards of the bottom board. However to use the entrance reducer in the same manner in the Fall or Winter could be disastrous. In the Fall of the year the reducer is put into a hive to help keep out mice and the notch should be up. The size of the notch used will be determined by the strength of the hive, usually the large notch is used as the hive should be strong. Often it is too cold for the bees to clean out the dead bees and with the entrance reducer notch in the up position, there is $\frac{3}{8}$ " space inside the hive that could be used for the dead bees. By the time the front entrance is plugged with dead bees, the cluster has usually moved up in the hive and they can use an upper entrance or ventilation port.

If you choose to use the $\frac{3}{4}$ " opening to the hive during the Winter without using an entrance reducer, you allow the bees a better way for the bees to clean out the dead bees when there are warm days. Remember that the bees only heat the cluster by their bodies and not the entire inside of the hive. During the 1900s, some beekeepers used hooked rods to reach in and drag out dead bees.

Other forms of entrance reducers include sliding metal pieces that have notches in them and can be fit to the hive that they are used.

Entrance reducers and entrance

Subscribe Today!
 visit us online at: www.farmingmagazine.net



Farming
 A Quarterly Publication
 1 year - \$18 (4 issues)
 Canadian subscribers: \$24
 2 years - \$32 (8 issues)
 Canadian subscribers: \$45

Use mail check or Money order to:
 Farming Magazine
 PO Box 85
 Mt. Hope, OH 44660

FARMING MAGAZINE
 "The Magazine that offers hope to the small Farmer"

Big Island Queens


Olivarez Honey Bees/Big Island Queens is seeking motivated beekeepers to join our Hawaii team! Experience preferred. Self-motivator and ability to work in a team environment a plus. Positions are full time, salary based on experience. Great Benefits Package. Prior work history and references required. Advancement opportunities available. Submit resume to info@ohbees.com or Olivarez Honey Bees Inc/Big Island Queens, P O Box 847 Orland Ca 95963, Fax: 530-865-5570, Phone 530-865-0298

SUGAR BRICKS
 "Convenient in every way"
 A year-round feeding strategy that reduces starvation and increases overwinter success.
 Eliminates the mess of syrup



3 1/2 lbs of feed per brick (approx. 6" x 6" x 2")
 Set of 12 bricks: **\$93** (Delivered in U.S.)
 Send checks payable to: Mel Disselkoes
 Apiaries, 1941 Alba, Wyoming, WY 82409
www.mdasplitter.com
 INTERNATIONAL MATING NUC, INC. © 2010

BEEKEEPER'S BEEHIVE BRANDER KIT
 Prevent Theft!



Mark your boxes and frames today!

- Heavy duty
- Light but rugged - easy operation
- 1/2" and 1" characters available
- Designed to produce very deep brands
- Uses Standard #20 propane BBQ tank

BRAND NEW INDUSTRIES INC.
 375 Pine Ave. #22
 Santa Barbara, CA 93117
 (800) 964-8251 BrandNew.net



I just finished watching *The World of Bees* and couldn't wait to get going!



What are you waiting for?
 Available at Amazon.com
theworldofbees.com

Country Rubes' Weatherproofed Bee-keeping Equipment
 Cannot Rot!



NEW!! FEEDING TRAYS & RIMS
 CANDY BOARD ALTERNATIVES
 Easy to use, no cooking!
NUCS & 5 FRAME EQUIPMENT
 Including 5-Frame Combo Deep Screened Bottom Boards and OI Trays

www.CountryRubes.com
 For Information, Prices & Orders
 Combo Screened Bottom Boards
 Robbing Screens
 Small Hive Beehive Baffles & Trays
 Hive Bodies—Deeps & Mediums
 Entrance Reducers
 Dusting Screens
 Observation Sticky Boards
 530-913-2724

Your Complete Bee Hive Supply Company



All woodenware available assembled and painted

Hives are constructed using precision box joints.

Our hand hold cutter leaves no tear-out!

- Unassembled Frames
- Assembled Frames
- Wax Foundations
- Shallow Super & Illinois Super
- Hive Body
- 8 Frame Equipment
- Deep and Medium Nuc Boxes
- Honey Processing Equipment
- Smokers, hive tools and much more.

Made with Eastern White Pine

Shipping Available

Forest Hill WOODWORKING
 1985 Mine Road • Paradise, PA 17562
 717-806-0193
 Manufactured in Lancaster County, PA
www.ForestHillBeeSupply.com

FULL ARK TEES
 NATURE APPAREL – BEES & MORE
www.etsy.com/shop/FullArkTees
fullarktees@gmail.com



guards are different pieces of equipment. Entrance guards usually are made of excluder material and should not be used continually on the hive. There are times that you may consider using one if you have crowded the bees due to comb honey production and don't want the bees to swarm. You may have a special queen in the hive and want to guarantee yourself that she doesn't leave. Many years ago beekeepers used a device called a queen and drone trap on their hives. It had an entrance guard in the lower half of the unit.

A mouse guard is a device that goes on the front of a hive that will prevent mice entering the hive. Again there are different styles of mouse guards from a strip of perforated steel with 5/16 to 3/8" holes to a strip of 1/4" hardware cloth.



The difference between a mouse guard and an entrance reducer is that the mouse guard covers the entire entrance of the hive, whereas the entrance reducer restricts the



opening. Sometimes the two devices perform the same purpose.

Entrance screens are used by beekeepers that move hives. The older beekeepers may have used a piece of window screen bent in a "V" and wedged into the entrance to keep the bees in the hive. If you didn't have the screen, you could plug the entrance with green grass. When you got to the new location, it was a simple matter to pull out the grass or the "V" screen. If you forgot the grass, it would dry up, turn brown and allow the bees to get out of the hive. I like an entrance screen that screws on to the front of the hive and provides an area for some bees to cool off without plugging up the entrance with bees. You are assured that the bees will stay in the hive and moves of longer distances may be made.

Thus you see there are several

options available to a beekeeper in regards to what type of bottom board and related equipment they could use. It often involves the type of beekeeping activities that are going to be done and the methods of beekeeping that you have been taught. **BC**



Russian Honey Bee Breeders Association

Our members alone:

- Operate isolated, untreated test yards to monitor mite population growth, honey production, and overall resilience (wintering, nosema, etc).
- Annually select the best from each line to propagate the next generation.
- All lines are shared among members to maintain genetic integrity, excellence, and to provide the industry with consistently outstanding foundation stock.
- Are the sole owners of all the lines of Russian honey bees brought into the U.S. by the USDA.

www.russianbreeders.org

THE source for pure Russian honey bee stock



Trees For Bees

 Reserve Your Trees Now!
Sourwood, Lindens & More
BeeBee Trees Ready To Go
Container Grown Trees
Ready to feed your bees
Bethpage, TN • 615.841.3664
 Visit rockbridgetrees.com



Stephen and Marlyn Miller

Toll Free 844-260-2015
 Business 937-464-4422
 House 937-464-9998

Full 2" High Density
 Polystyrene
 10-Frame hives – **\$69.95**
 Six-Frame Hives – **\$59.95**



Polystyrene Products Made In Ohio

Superior Bee

2396 County Road 105
 Belle Center, OH 43310

Thank You
 For A Great
 Season

Taking Orders
 For 2016 In
 December

God Bless America

Hardeman Apiaries

P.O. Box 214
 Mount Vernon, GA 30445
912.583.2710

JAWADIS USA www.jawadis.us
 Happy Thanksgiving
 wholesale inquiries welcome!
 Call or SMS (872) 529-2347 info@jawadis.us



Queen Right Colonies®

43655 State Route 162
 Spencer, OH 44275

Tel: (440) 647-2602
 Fax: (440) 647-0922

Email: info@queenrightcolonies.com
www.queenrightcolonies.com

Barry & Darryl
 unloading
 package bees
 at QRC last
 April.



www.queenrightcolonies.com

Order California Package Bees

We are now accepting orders for 3 lb. package bees, call us today!

2016

New World Carniolan & Italian Package with Queen

3 lbs. for \$120

*Prices are subject to change, check our online store for updates

We plan our delivery for approximately the third week in April (check our website for updates, www.queenrightcolonies.com & Facebook).

We ship UPS /USPS | All major credit cards accepted. | Call today!

STORE HOURS:

(March 1 - Oct. 31)
 Monday - Friday: 10 a.m. to 6 p.m.
 Saturday: 10 a.m. to 2 p.m.
 (Closed Sundays)

(Nov. 1 - Feb. 28)
 Monday - Saturday:
 10 a.m. to 2 p.m.
 (Closed Sundays)

A Full line of
 Beekeeping Supplies
 in Stock Year Round!

LIVE BEES NOW ON SALE

Order in November and save 8%
 3# package of bees...\$129.72 and up
 Nucs...\$204.24
 Standard Hive with Bees
 Delivery Only...\$515.20
 Super Deluxe Hive with Bees
 Pick Up Only...\$671.60
 Queens...\$37.00 and up



706-638-1491

www.pigeonmountaintrading.com

We now have Bears!

Plastics Packaging Concepts, Inc.
A full line of honey containers to get your product noticed! Bears in 12oz and 16oz, Angels in 12oz capacity with John 3:16 engraved on the back, sleep bottles, and more! Caps and custom printed labels available with bottle orders.
Call (816)882-8295 or visit www.ppc3.com to see our full line.

Bee Amour
NEW CAST HONEYCOMB SERIES NOW AVAILABLE ONLINE!
/ BEEAMOUR / LOVEBEEAMOUR
WWW.BEEAMOUR.COM

Buzz, buzz, buzz.
Beekind.
Bee true to your hive.

Available At
www.bumpersticker.guru

Seeds for honeybee habitat

ERNST SEEDS

POLLINATOR APPROVED

ernstseed.com
sales@ernstseed.com
800-873-3321

f in t g+ u

SIMPSON'S BEE SUPPLY
"Order Now"
2016 April Packages (Pick up only)
Mite Away Quick Strips
Classic Glass & Plastic Jars
4.9mm Plastic Drawn Comb Frames
4, 8, 16 oz. Muth Jars With Corks
Honey Filled Candy \$65/case

15642 Tiger Valley Road
Danville, OH 43014
740.599.7914
cwsimpson@embarqmail.com
www.simpsonsbeesupply.com

HiveTracks
KNOW YOUR BEES

The world's leading beekeeping software is better than ever. Join thousands of beekeepers around the world who are improving their record keeping. We help you **Know Your Bees** better than you ever thought possible.

Mobile friendly web app

Bee club maps and stats

Nuc and top bar hive types

Go to hivetracks.com/beeculture to sign up and see what's new!

OTS QUEEN REARING: A SURVIVAL GUIDE FOR BEEKEEPERS WORLDWIDE
www.mdasplitter.com

Send \$49.99 + \$5.60 shipping (U.S.) to:
International Mating Nuc, Inc.
P.O. Box 9552, Wyoming, MI 49509

INTERNATIONAL MATING NUC, INC © 2014



From A Beekeeper's Wife –

Dear Sis:

Returns are in! You will be glad to know that our wholesale honey sold for a good price and as a result we have \$2250 in the bank! It really seems too good to be true that we have all that money in a lump. We have never had such a good year since we spread out from our home apiary. I believe that each one of us has spent that money a thousand times in imagination.

Of course, I want it spent on the children and the house. Harriette will be ready for college next fall if she can take a little extra work this Winter, so I want her to have lessons in French and German. Then Florence needs a new piano – ours is absolutely worn out, and the child has so much ability that I hate to hear her trying to get music out of it, although, I believe she could get music out of a tin pan. And when I look at the house and see the painting and papering that needs to be done, I just ache to spend some money that way. Then if we could take a few of the good magazines that we long to be reading each month! Oh dear, I am dreaming again, when Rob has said that every cent we can spare must be paid on the principal of the mortgage. I suppose everyone has a specter in the background – ours is a vampire called Principal that consumes everything we have.

I suppose Winter is the bees' specter. It is always in the background, even on the sunniest day of Summer. They must work and hoard every minute, and what is it all for? Winter, the inevitable, comes along with its icy fingers, and the Summer stores in the cells gradually grow smaller. The poor little creatures don't realize that their specter is there while they work, and it is a blessing they don't. Now as I have planned how I would like to have the honey money spent, I have known all the time that it would have to go toward reducing that principal. However, it doesn't spoil the pleasures of dreaming – nothing can do that!

Rob has been packing in the bees for the Winter and I wish you could see them! We are putting four hives close together in a big box and filling in all around them with a thick layer of dry leaves. Surely with such a blanket they can't help but be warm. Isn't it wonderful how they know how to keep up the warmth of the hive themselves? Last Winter we had some in the observation hive just outside our bedroom window and they were good as a thermometer. When the weather was cold the cluster drew together, but just as soon as it grew warmer, the cluster would break out again. During cold weather, there was always a circle of buzzing bees in the center, working hard to keep up the warmth. Those in the circle of buzzers would give up their places to others, who would begin moving and buzzing immediately, so the circle remained unbroken. Billy said he was going to watch until he saw two bees quarrel over whose turn it was to make heat, but that never happened. The harmony and obedience to law in a bee colony is marvelous, isn't it? We all felt sorry when that brave little colony finally succumbed to the cold.

This year Rob has given each of his colonies more honey than it can possibly consume during the Winter, but he says he is going to make sure that none die of cold or starvation. This packing will soon be over and then he will have time at last to read the file of old bee journals that he bought last May at a farm sale. He has been waiting patiently for the leisure to get at them, for he says that some of those old journals are better than much of the more recent literature. I wonder if he is right.

I hope your boys are over their colds. Give them each a hug for me.

With love to you,

Ever your loving sister,
Mary

BIGGER PICTURE

Jessica Louque

Holidays In A Honey Daze

It seems like every year, the holidays start earlier. I went into the dollar store in August and they already had Halloween candy out! I saw an article online that one of the bigger retailers had already started putting up Christmas trees in September. Another headline discussed how the consumer industry is pushing holidays so much now that Black Friday is rendered nearly obsolete as most people have already finished off most of their shopping by then. My family used to go Black Friday shopping, but it was more of a family-hanging-out time instead of shopping. People are so inconsiderate of others now that it's actually a dangerous endeavor to go shopping in public. Consumerism and social media are pushing more people into arrogant narcissists who are all about perceptions rather than the meaning of holidays.

This year, I want to change some of that, or at least start a change. With so much focus on money, and appearances, and buying the right gift, less and less attention is paid to the holiday itself. While I want the kids to enjoy their holidays, I don't want it to be all about what they get or don't get. Starting with Thanksgiving, I have a positively foolproof (albeit completely untested, so that could be totally false) plan of the five ways to get back in the holiday spirit this year.

1. Food

There is nothing that can say comfort or family like food. From the prep to the delivery to the digestion, food is a pleasure that can be a gift like no other. Most of the people in our family's life have a lot of stuff. What more stuff can we give them that is actually useful? Giving someone the gift of food shows that you know them well

enough to create a food they will enjoy, and that you took the time to make something and package it up just for them. For some of us, that will be something of a honey and homemade jelly set or some sort of other item that only comes from the hard work of a home kitchen or garden. For those of you who will be taking food to gatherings, or want to give something special, I have a few ideas for you.

This is a recipe from one of my favorite cookbooks, *From Scratch* by Shaye Elliott.

Roasted Figs with Honey and Goat Cheese

12 figs, quartered $\frac{3}{4}$ of the way down (it makes a little basket with the bottom of the fig holding it)
1 small log of goat cheese, approximately 12 tablespoons
6 teaspoons of warm honey

Arrange the figs on a baking pan. Stuff each fig with goat cheese. Roast the figs at 425°F for about 10 minutes. Remove the figs from the oven and drizzle with honey.

This is a really simple recipe that is absolutely delicious, assuming you like the combo of flavors. It's a little unique, but it's an excellent finger food at a family dinner or meeting with friends. The flavor combination is reminiscent of Fall flavors and is full of warmth.

If you're looking for a food item that is more of a gift, look no further than Peanut Brittle. Again, the same cookbook has my favorite recipe. Sometimes, it's a little hard to find rapadura without ordering it online, but it's worth it.

Peanut Brittle

2 tablespoons butter (unsalted works better depending on your taste)
1 cup rapadura (dehydrated whole cane sugar)
1/4 cup honey
1/4 cup water
2 tablespoons coconut oil
1 teaspoon vanilla extract (I prefer Bourbon Barrel Smoked Vanilla or Nielsen Massey)
1 cup dry-roasted peanuts
pinch of salt
1 teaspoon baking soda

In a large saucepan, combine the rapadura, honey, and water. Bring to a boil and add the coconut oil and vanilla extract. Stir constantly until the candy reaches 280° on a thermometer. Add in peanuts and salt, but do not stop stirring until the candy reaches 300 degrees.



Being festive with our favorite priests.

Take the pan off the heat and add in baking soda. Keep stirring and pour mixture onto a greased cookie sheet. Shake the pan to spread out the candy. After it cools, break into pieces.

For those of us that are of the bee persuasion, it's always important to use honey in our food to spread the word about the awesomeness of our skills. There are a ton of recipes out there that can cater to whatever crowd you're trying to please, and food gifts normally don't break the bank, but still make the recipient feel special.

2. Charity

The Winter season is full of holidays that are celebrated by a wide variety of cultures and religions. Although not everyone celebrates the same thing in the same way, the general sentiment of peace and goodwill spreads as an underlying theme to everyone. A lot of people seem to donate more money at this time of year, but maybe we should all donate our time, which is worth so much more. There are tons of options for volunteer work, and it's also a good bonding experience for a group, whether it be family, friends, or an organization. Most bee clubs have some sort of heavy influence towards public education and interaction, so this would be the perfect time to gather as an association and teach a honey cooking or baking class. Maybe this class could be taught on a lower level to a children's home, or at a rest home to the elderly who likely were better cooks than all of us at one point. Find some books about bees and read at a homeless shelter. Make candles for your local church (our church only uses beeswax candles). Since bees are animals, consider helping out their "animal cousins" by working at an animal shelter. This is the current top of the list for the kids to try out, so we will see if we can volunteer there without becoming animal hoarders.

3. Holiday Spirit

This is an obviously vague title, but it encompasses so much. Sometimes the festivity of the season is lost because of the stress that is involved with holiday preparations. This is the key time for a complete meltdown. Between extreme house cleaning, worrying about appearances, cooking everything perfectly, family interactions, travel, and the hazards of everyday life, anyone could feel lost for a good two months of the year. This year, I want to be able to enjoy decorations, and music, and festivities



Our honey ready to go.



Family bonding time at Thanksgiving.

without feeling jaded or overwhelmed. Christmas music is my favorite, but along with everything else in the season, it's become commercialized. You can't go into a store from Halloween until New Year's Day without hearing the newest pop version ruin a classic.

Food prep for gifts and gatherings is a good way to get in the spirit. Find your own favorite version of holiday music, light some A.I. Root candles in your favorite scent, and wrap gifts. Make your own decorations, and design them with your family. Plan some traditions unique to your friends or family. My favorite seasonal thing to do is send out personalized Christmas cards. Whatever it is that gets you in the holiday spirit, do it often and with loved ones if possible.

4. Religion

Not everyone comes from a religious background, or chooses to be religious. I'm totally fine with that. The rest of us that are religious want to shove holiday cheer down your throat and some various drama of holiday religious controversies ("did she just tell me HAPPY Christmas? That heathen!"), but often we forget why we have our holidays in the first place. Thanksgiving is cool because we get time off from work and see our families and eat a lot, but the actual being thankful part gets left out. We, as Americans (except for those of you who aren't, of course), are a lot better off than most other countries, and we are totally ignorant of that fact. It's funny to see a trend of #firstworldproblems on the internet because it's so popular, without most of those people ever stopping to



Holiday spirit with our only snowfall and Mr. Snowman.

think of what that really means. Christmas is supposed to be celebrating the birth of Christ and Christianity, but now it looks more like a holiday to see what Christmas card is concocted by the Kardashian family.

I would like my family to have a more religious experience this holiday season, with a better understanding of not only their Catholic background, but of the others that are experiencing the season with different holidays. I know a base amount of knowledge about Hanukkah, for example, but not enough to feel comfortable having an intelligent conversation about it. Understanding and acceptance of other people's beliefs will help the kids appreciate the differences in their own, while learning to respect other backgrounds.

5. Family Time

None of these things can happen without family time. We obviously see each other on a daily basis, but with the pressures of work and school it's often a hectic mess of homework, maybe food, *probably* clean clothes, and has anybody fed the chickens today? The kids are growing up fast, and there's not a lot of time left to spend with them to preserve memories. I want to be able to include them in the decisions about what makes them feel like they are making an impact on society, what kind of decorations they want to make, or what kind of food they want to make for friends and family. There's so much focus on the stress of the season that the short window of opportunity to spend with family is lost. This year, the Louque family is going to shoot our own turkey (or three depending on how

fast the boys are growing at the time), make pumpkin pie from scratch, sing songs, decorate cookies, make popcorn garlands, go caroling, roast chestnuts on an open fire, and make snowmen out of the snow that we don't have . . . That's the plan, anyway.

So there you go. Maybe all of my ideas will come to fruition, or maybe we will give in to the holiday grind and none of them will happen. If nothing else, we'll wrap the hives in garland and wreaths and attack the bees with tiny little Santa hats and turkey feathers and say we did our job. Happy Holidays to everyone, and I wish you the best of luck in your seasonal endeavors to not get mauled, robbed, or end up in jail. **BC**

Fourth Generation Beekeeping and Queen Rearing Experience



Italian Queens
Strong Hives for California
Almond
Very comparative for
Honey Crop and Overwintering
in Northern States
April-October & January

Queen Cells
Shipping and Local pick up
March-September

(530) 671-6188
anbees@yahoo.com

Bee Smart® *the Ultimate Beekeeping Products!*

DESIGNS Visit our New Website and Discover our New Frame Gripper!



**Ultimate
Hive Stand**



Fits 8 or 10 frame boxes. Built-in frame holders. Sturdy design.

**Ultimate
Feeders**



In-hive and Hive-top feeders for 3 season use.

**Ultimate
Hive Cover**



Fits 8 or 10 frame boxes. Insulates hive. Never needs painting.

**Ultimate
Uncapper**



Use with 5 gal. bucket. Perfect for hobbyists.

**Ultimate
Gripper**



New!
Lift, separate and remove frames easily with this all-in-one tool!

1-800-600-7446 • www.beesmartdesigns.com • Made in USA

Our projects support you

*Hive Tracking Project
Bee Understanding Project
Collaborative Projects with state and local beekeeping groups*

**Support our work!
Become a member today!**



**Join us!
Become a member today!**



Pollinator Stewardship Council
P.O. Box 304, Perkinston, MS 39573
www.pollinatorstewardship.org
832-727-9492

GLEANNINGS

NOVEMBER 2015 • ALL THE NEWS THAT FITS

EAS CHAIRMAN'S AWARD 2015



At the 2015 EAS Annual Conference in Guelph, Ontario, the Chairman's Award was given to Kim Flottum and Kathy Summers. Kathy served as EAS Newsletter Editor for 15 years, and then as Vice Chairman for six years. She was President in 2005 when EAS celebrated their 50th Anniversary at Kent State. Kim Flottum served as the Connecticut Director for two years, then as Membership Chairman for several years after moving to Ohio. He was elected Ohio Director and served for eight years on the Board. He was President in 1995 when the conference was held at Wooster College, and again in 2009 when it was held at Holiday Valley Resort in Ellicottville, NY. He served as Chairman Of The Board for eight years, and served as Chairman Emeritus and Historian for eight more. The combined time this couple has served EAS is just short of 50 years. *submitted by Loretta Surprenant, EAS Secretary.*

PAINFUL AWARD

A Cornell University graduate student who allowed honeybees to sting him in 25 places and a group of scientists who concluded it's possible for one man to father 888 children are among the winners of this year's Ig Nobels, which honor humorous scientific achievement.

Michael Smith estimates he was stung about 200 times during his 2012 honey bee study. His conclusion: The three most painful places to get stung are the nostril, the upper lip and the male sex organ.

"A sting to the nostril is so painful it's like a whole body experience," he said.

Smith shared the Ig Nobel for physiology and entomology with Justin Schmidt, an adjunct professor at the University of Arizona who devised a pain scale for insect stings.

His advice: Do not get stung by the tarantula hawk, a nasty looking wasp found in the Southwestern U.S. with a stinger about a quarter-inch long.

"The sting is entirely nontoxic but hurts like the bejesus," Schmidt said.

OBITUARY

I know that many have read and enjoyed *Manuka*, so I thought I'd let you know that sadly the star of the book, Dr. Peter Molan, has died after a long illness at home in Hamilton, New Zealand.

For those of you nearby in New Zealand, you may wish to attend Peter's funeral in Hamilton, which will be held at the St Peters Cathedral, 51 Victoria Street, Hamilton on Tuesday, September 22, 2015, at 10am.

For those of you who are further afield, and may want to pass on to his family your thoughts, you can visit his Guest Book at <http://www.legacy.com/guestbooks/waikato-times-nz/peter-charles-molan-condolences/175861927?cid=full>

I'm currently at the World Beekeeping Congress in Korea, and I've written the following obituary, which I hope will be made available to congress participants:

It is with profound sadness that I must announce the passing of one of the world's great honey scientists, and the person who more than anyone else helped ignite a renewed global interest in that product's therapeutic properties. Dr. Peter Molan, the discoverer of the unique antibacterial property in manuka honey, has died at his home in Hamilton, New Zealand. He was 71.

Dr. Molan and his family immigrated to New Zealand from Wales following the completion of his PhD in 1973. He subsequently worked as a lecturer in biological sciences at the University of Waikato for 41 years before his retirement in 2014. He held the positions of Professor in



Biological Sciences and Director of the Honey Research Unit.

His qualifications were in biochemistry, but the research work in his career spanned a wide range of topics related to human and animal health. He began to focus primarily on the use of honey as a medicine following his discovery in 1980 that manuka honey has an unusual type of antibacterial activity that makes it especially effective in treating infections. That then led into research on the treatment of wounds with honey, and the development of honey-based materials for use as wound dressings.

In 1995 he was awarded an MBE in the Queens Honours List for his services to beekeeping. The citation read: "His work has been the single most important factor in both the domestic and international change in perspective regarding the value of New Zealand honeys."

Cliff Van Eaton

Resubscribe Today!
Don't Miss A Single Issue Of
Bee Culture.
Visit www.bee-culture.com

KELLEY BEEKEEPING EXPANDS



Kentucky-based Kelley Beekeeping, which manufactures beekeeping products for the hobbyist, small business and commercial markets, announces a \$7.5-million expansion project.

The company purchased 20 acres of land for construction of a 100,000-square-foot manufacturing and showroom facility. The expansion will create 50 jobs and accommodate continued growth for the company, which has added jobs overall but also sees seasonal swells, most recently to 110 employees. The company expects to attract additional tourism to Kentucky.

More than 300 people visit the operation each weekend during the Spring.

Kelley Beekeeping chief executive Dan Ferrise says the company expects the expanded showroom facility to open in early June 2016, coinciding with the company's annual Field Day event. That's when more than 300 beekeepers from across the central U.S. visit to learn and share knowledge with other bee enthusiasts.

The company was established in 1924 and is a manufacturer of more than 3,000 beekeeping products. Those products include a range of specialty supplies, such as woodenware units for keeping hives, protective clothing, honey extraction equipment and a variety of bees.

It made its home in Kentucky in 1934 and opened a facility in Grayson County in 1952.

The Kentucky Economic Development Finance Authority has preliminarily approved the company for tax incentives up to \$1 million through the Kentucky Business Investment program.

The performance-based incentive allows a company to keep a portion of its investment over the term of the agreement through corporate income tax credits and wage assessments by meeting job and investment targets. It also received \$100,000 in incentives under the Kentucky Enterprise Initiative Act.

The company is also eligible to receive resources from the Kentucky Skills Network. Under this program the company is eligible to receive no-cost recruitment and job placement services, reduced-cost customized training and job training incentives.

Alan Harman



CLIMATE CHANGES

With climate change killing off some of their favorite flowers, two bumblebee species in the American Rocky Mountains are reacting by evolving shorter tongues.

This unusually rapid evolution – in less than 50 years – has left the insects poorly suited to feed from and pollinate the deep flowers they were adapted to previously and they are both declining in number.

The results highlight how mutually beneficial ecological partnerships can be lost due to shifts in climate.

Many co-evolved species have precisely matched traits and long-tongued bumble bees are well adapted for obtaining nectar from deep flowers with long corolla tubes.

State University of New York researcher Nicole Miller-Struthman studied three high-altitude sites in Colorado where two species of long-tongued alpine bumble bees live.

Using specimens of *Bombus balteatus* and *B. sylvicola* from 1966 through 1980, and from 2012 through 2014, the researchers measured changes in tongue length and found a significant shortening.

Subsequent research into the reason for this eliminated decreasing body size, competition from invaders, or co-evolution with flowers in the area.

Instead, the research team report in the journal *Science* it is a result of warming Summers, which reduced numbers of the deep flowers these species preferred, forcing the insects to be general foragers capable of feeding across the remaining flowers, including many shallow flowers.

“Our analyses suggest that reduced flower density at the landscape scale is driving this shift in tongue length,” the researchers said in their study.

Alan Harman



Queen bumblebee, *Bombus balteatus*, foraging on the alpine tundra of Pennsylvania Mountain. (Photo by Christine Carson)

QUEENS!

Episode 1: From the 2014-2015 Management survey, **beekeepers who replaced queens** in their operation between April 2014 and March 2015 **reported 14.6% fewer losses** than beekeepers who did not replace any queens in their operation. *Stay tuned for more queen results in December!*



Sign up to Participate in
Next Year's Survey Now!



Be Included. Be Involved. Bee Informed.

Using Beekeepers' real world experiences to solve Beekeepers' real world problems

FOR MORE DETAILS ABOUT US AND WHAT WE DO, GO TO: WWW.BEEINFORMED.ORG

TINY, TINY TRANSMITTERS . . .

Australian researchers are gluing tiny transmitters to the backs of the insects as part of a project that shows nosema is not benign and does affect hive productivity.

Lead researcher Lori Lach of James Cook University in Queensland says her team glued radio-frequency identification (RFID) chips to the backs of 960 bees.

The team infected half the insects with a low dose of nosema spores, the gut parasite common amongst adult honeybees, while the rest remained disease free.

Lach says it was a unique use of the RFID technology and allowed the bees to be monitored individually for the first time.

"We just had to hold them in our hands and hope the glue dried quickly," she says.

"It was actually quite a process – they had to be individually painted, then individually fed, then the tag glued on."

They were then individually scanned so the researchers knew which tag was on what color and treatment bee and which hive it was going into.

"It all had to happen within about eight hours of emergence because as the day goes on they start learning how to fly and they get better at stinging," Lach says.

"No one had looked at bees at this level before, to see what individual bees do when they are sick."

Using the RFID tags in combination with observations at the hives and artificial flowers, the researchers were able to see how hard the bees worked and what kind of material they gathered.

The species of nosema used in the study (*Nosema apis*) has long been thought to be benign compared to the many other parasites and pathogens that infect honey bees, and no one had previously looked for the effect of nosema on behavior with such a low dose.

"We knew dead bees couldn't forage or pollinate," Lach says. "But what we wanted to investigate was the behavior of live bees that are affected by non-lethal stressors."

In a newly published paper, researchers say infected bees were 4.3 times less likely to be carrying pollen than uninfected bees, and carried less pollen when they did.

Infected bees also started working later, stopped working sooner and died younger.

Lach says while nosema-infected bees look just like non-infected bees, it's important to understand the behavioral changes the parasite may be causing.

Alan Harman



An Aussie bee at work with its tiny transmitter on its back. (Photo by Lori Lach)




**DON'T BE FOOLED BY
lesser quality imitations!**

Buy Maxant — Buy America — Buy Quality!

www.maxantindustries.com

978-772-0576

Built to Last a Lifetime

. . . TRACKING BEES

Australian pollen specialists are taking their bee-tracking technology global after a successful trial last year.

As part of the Global Initiative for Honey bee Health (GIHH), tiny sensor chips will be glued to honey bees, giving an insight into their daily routine - and the threats they face.

In a world first, the initiative will seek to address threats such as colony collapse disorder and Varroa mite through a world-wide data collection exercise involving scientists from Australia, New Zealand, Brazil, Mexico and the United Kingdom.

Over the next few years Australia's Commonwealth Scientific and Industrial Research Organization will be leading an international alliance of researchers, in collaboration with beekeepers and farmers, to place tiny sensors onto the backs of honey bees.

The micro-sensors are manually fitted to bees and send out signals to strategically placed receivers that identify individual bees and record their movements in and around bee hives.

Data collected through the 'backpack' sensor system will provide valuable insights into bee behavior and help the development of sustainable long term solutions for bee health.

"The tiny technology allows researchers to analyze the effects of stress factors including disease, pesticides, air pollution, water contamination, diet and extreme weather on the movements of bees and their ability to pollinate," CSIRO Science Leader Paulo de Souza says.

"We're also investigating what key factors, or combination of factors, lead to bee deaths on mass.

"The sensors, working in partnership with Intel technology, operate in a similar way to an aircraft's black box flight recorder in that they provide us with vital information about what stress factors impact bee health."

As bees are normally predictable creatures, changes in their behavior indicate stress factors or a change in their environment.

By modelling bee movement, researchers can help identify the causes of stress in order to protect the important pollinating work honey bees do and identify any disease or other biosecurity risks.

Australia is particularly interested in the research on *Varroa* because it the last major country not to have been hit by the mite.

John Roberts, who studies the viruses transmitted by the Varroa destructor mite, says Australia is in the enviable position of being able to learn from the damage control strategies of other countries.

"The *Varroa destructor* does what it says – it destroys, and it's the feral honey bee population that is always hardest hit," he says.

"The impact of losing the free pollination done by feral honey bees will be farmers paying for beekeepers to bring bees in to pollinate their crops, resulting in price hikes in everything from cucumbers and cherries, to macadamias and onions."

But Roberts remains optimistic.

"You never know where technology will lead us," he says. "Our scientists or those in other countries might come up with new ways of managing bees somewhere on the planet, so Australia will be able to respond quickly and effectively when the destructive mite does get here."

The international initiative is being mounted to assist in uniting the efforts of those working in the critical area of protecting bee health.

Analysis of the data gathered by the global initiative will provide valuable information to scientists, beekeepers, primary producers, industry groups and governments to achieve impacts around improved biosecurity measures, crop pollination, bee health, food production and better strategies on sustainable farming practices, food security and impacts on ecosystems in general.

"The time is now for a tightly-focused, well-coordinated national and international effort, using the same shared technology and research protocols, to help solve the problems facing honey bees worldwide before it is too late," de Souza says.

Alan Harman



Bees with backpacks fly in to help fight global diseases. (CSIRO photo)

CALENDAR

◆ARIZONA◆

9th Annual Chemical Free Organic Beekeepers Conference will be held February 26-28 in Oracle. The cost is \$200 and includes two nights lodging, six meals and the meeting. For information contact Dee Lusby, deelusby1@aol.com.

◆ALABAMA◆

The **AL Cooperative Extension System's 21st Annual Beekeeping Symposium** will be held February 6 at the Clanton Conference and Performing Arts Center. Speakers are Marion Ellis and Jennifer Berry. A beginning workshop will be available. For details and to register visit <https://mell-base.uce.auburn.edu/wconnect>, or contact Paul Mask, 334.844.4450.

◆CONNECTICUT◆

Back Yard Beekeepers Association 2015 Speaker Schedule – November 17, Michael Fairbrother of Moon Light Meadery on Mead. Each month we have timely weekend hands on inspection workshops, bee school, mentor program and more. For dates and locations and more information please visit www.backyardbeekeepers.com.

◆FLORIDA◆

The **Florida State Beekeepers** will hold their annual meeting November 20-22 at the Amelia Island Omni Resort on Amelia Island, FL. For more information www.floridabeekeepersconference.com.

◆KENTUCKY◆

Tri-County Basic Beekeeping School will be November 21 at Springfield Campus, ECTC, 160 Corporate Dr., Springfield. The cost is \$25 or \$30 at the door which includes lunch and handouts. For information and to register contact 502.348.9204 or robsmith@uky.edu.

◆LOUISIANA◆

The **LA Beekeepers Association** will hold their annual convention December 4-5 at the Hilton Garden Inn, 400 Mane Street, West Monroe. Mention the beekeepers when you call for your room reservation, 318.398.0653. Speakers include Cris Hiatt, Randy Oliver, and David Tarp. Registration is \$20/person or \$30/family until November 13. Send check payable to LA Beekeepers Assn. to David Ferguson, P.O. Box 716, Brusly, LA 70719. For information contact Joe Sanroma, 318.308.5000 or Amy Weeks, 318.325.6614.

◆MICHIGAN◆

The **Holland Area Beekeepers' Association (HABA)** will hold its annual beginning beekeeping school February 6. The cost is \$40. Visit <http://hollandbees.org> for details.

◆MONTANA◆

Master Beekeeping Certificate endorsed by MT State Beekeepers Association; The American Honey Producers Association and Project Apis m. For more information visit www.UMT.EDU/BEE.

◆OHIO◆

Medina County Beekeepers Association meets the third Monday of the month at the Root Candle Company in Medina, OH. The meeting starts at 7:00 p.m. For more information visit www.medinabeekeepers.com.

◆OREGON◆

The **Oregon State Beekeepers Association** will hold its annual Fall conference November 6-8 at the Oregon Garden in Silverton. Speakers include Peter Berthelsen, George Hansen, Pat Heitkam, Jay Miller, Randy Oliver, Ramesh Sagili, Nick VanCalcar and Clint Walker. For information go to www.orsba.org.

◆PENNSYLVANIA◆

The **Western PA Beekeeping Seminar** will be February 19-20, 2016 at Doubletree by Hilton, Mars, PA. Speakers include Jeff Harris, Diana Sammataro and Christine Grosinger. For information contact Lyn Szymkiewicz at lynszym@comcast.net or 412.855.0710.

◆VIRGINIA◆

Virginia State Beekeepers Association will hold their Fall Conference November 8 at Blue Ridge Community College, Weyers Cave, hosted by Shenandoah Valley Beekeepers. For more information and registration form visit www.virginiabeekeepers.org.

◆WISCONSIN◆

WI Honey Producers Association will hold their annual convention November 5-8, Stevens Point. For more information visit www.whpa.org.

UNITED STATES POSTAL SERVICE® Statement of Ownership, Management, and Circulation (Requester Publications Only)

1. Publication Title: *Bee Culture*

2. Issue Frequency: *Monthly*

3. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®):
P.O. Box 706, Medina, OH 44258

4. Issue Date for Circulation Data Below: *10/01/2015*

5. Extent and Nature of Circulation: *Worldwide Beekeepers*

6. Total Number of Copies (Net press run): *31500*

7. Paid Circulation (By Mail and Outside the Mail): *14820*

8. Total Paid Distribution (Sum of 7a, 7b, 7c, and 7d): *14820*

9. Total Distribution (Sum of 8a and 8b): *17036*

10. Total Paid (Sum of 7a and 7b): *17036*

11. Percent Paid (Sum of 7a and 7b divided by 10): *54%*

12. Total Number of Copies (Net press run): *31500*

13. Paid Circulation (By Mail and Outside the Mail): *0*

14. Total Paid Distribution (Sum of 13a, 13b, 13c, and 13d): *0*

15. Total Distribution (Sum of 14a and 14b): *0*

16. Total Paid (Sum of 13a and 13b): *0*

17. Percent Paid (Sum of 13a and 13b divided by 16): *0%*

UNITED STATES POSTAL SERVICE® Statement of Ownership, Management, and Circulation (All Periodicals Publications Except Requester Publications)

12. Electronic Copy Circulation

13. Paid Electronic Copies: *0*

14. Total Paid Print Copies (Line 10a) + Paid Electronic Copies (Line 13a): *17036*

15. Total Paid Distribution (Line 10b + Paid Electronic Copies (Line 13a)): *17036*

16. Percent Paid (Sum of 15a and 15b divided by 16): *98%*

17. Publication of Statement of Ownership: If the publication is a general publication, publication of this statement is required. (08 is printed in the November 2015 issue of this publication.) Publication not required.

18. Signature and Title of Editor, Publisher, Business Manager, or Owner: *Kim Holten, Editor*

Date: *10/1/15*

Don't Fall Behind the Times!

SUBSCRIBE NOW TO THE AMERICAN BEE JOURNAL

THE BEEKEEPER'S COMPANION SINCE 1861

Save \$ By Reading the American Bee Journal

Many subscribers say they easily save the cost of an entire year's subscription from a single informative article in the American Bee Journal. Free sample copy upon request.

1-888-922-1293
www.americanbeejournal.com

Display Advertisers

Bees & Queens

A.N. Bees	90
Gardner's Apiaries	38
Hardeman Apiaries	85
Koehnen, C.F. & Sons	63
Miksa Honey Farm	77
Old Sol Apiaries	71
Olivarez Honey Bees Inc	61
Pigeon Mountain Trading	85
Roberts Bee Company	84
Rossman Apiaries	2
Selby Apiaries	77
Spell Bee Company	38
Strachan Apiaries	78
Taber's Queens	17
Waldo Apiaries	62
Weaver, R Apiaries	62
Wilbanks Apiaries	50

Associations/Education

American Bee Journal	94
American Beekeeping Federation	30
American Honey Producers	54
Beekeepers Quarterly	66
Farming Magazine	83
MT Beekeeping Program	84
Mother Earth News	8
OSBA Beekeeper DVD	39
OTS Queen Rearing	86
Permaculture Magazine	74
Pollinator Stewardship Council	90
Project Apis m	12
Root Publications	17,49
Russian Bee Breeders Assn	85
Wicwas Press	19
World of Bees Video	83

Equipment

A&O Hummer Bee Forklift	22
Bee-Z-Smoker	10
Country Rubes	83
Cowen Mfg	78
Dakota Gunness	66
EZ Pry Hive Tool	66
Forest Hill Woodworking	83
Gold Star Top Bar Hives	17
Langstroth Brood Box	39
NMC Forklift	71
Pierco Frames	36
Superior Bee	85
Ultimate Beekeeping Products	90

Related Items

Angel Bottles	86
Bee Amour Jewelry	86
BeeInformed.org	92
Beekeeping Insurance	62
BL Plastic Containers	71
Branding Irons	83
Bumper Stickers	86
Fixit Hive Repair	77
Full Ark Tees	83
Global Patties	24
Help Wanted	83
Hive Tracks	86
JLR Machine & Welding	71
Medivet	44

Microbials	74
Mother Lode Products	51
Nite Guard	58
NOD Apiary Products	54
Nozevit	74
Oxalic Acid Vaporizer	44
OxaVap	80
QSI Bee Products Analysis	78
R. M. Farms	84
Sailor Plastics, Containers	11
Sugar Bricks	83
Thymol	74
Z Specialty Food	50

Seeds & Plants

Ernst Seeds	86
Trees For Bees	85

Suppliers

Acorn Beekeeping Equipment	57
B&B Honey Farm	58
Beeline Apiaries	63
BetterBee	4
Blue Sky Bee Supplies	1
..... Ins. Back	
Brushy Mountain	57, Ins. Front
Dadant	3,32,40
Jawadis Suits and Jackets	85
JZsBZs	34
Kelley Beekeeping Co	14
Mann Lake Supply	56
..... Back Cover	
Maxant Industries	93
Miller Bee Supply	61
Queen Right Colonies	85
Ross Rounds	17
Rossman Apiaries	2
Sherriff Beesuits	27
Simpson's Bee Supply	86
Thorne Bee Supply	78
Valley Bee Supply	51



If you are having an annual meeting or teaching a beginning beekeeping class, we are happy to send you magazines to give to your attendees and students.

BUT – we need to receive your request **four weeks** before your event so that we have time to process your request.

Please email Amanda at Amanda@BeeCulture.com with the number of magazines needed, a complete mailing address and a contact person.

Check Us Out At

- www.BeeCulture.com
- [www.Facebook.com/Bee Culture Magazine](http://www.Facebook.com/BeeCultureMagazine)
- [Twitter.com/beeculture](https://twitter.com/beeculture)

Sign up for the FREE News Service – CATCH THE BUZZ – at BeeCulture.com, and read hundreds of recent BUZZ posts at BeeCulture.com/category/catch-the-buzz

On my way to the Flat Tops on a hot August day, I choked as dust clouds rolled off the road. I had the windows down on my 1986 Toyota Tercel wagon, because of course the air conditioner didn't work. Then for no apparent reason, I noticed a big dashboard button that read *Econo AC*. I thought, "I wonder what would happen if I pushed that button." So I did.

When I turned on the fan, cool air gushed onto my legs. I rolled up the windows. My AC works perfectly. I've owned this car a half-dozen years, but when I get a wrong idea stuck in my head, sometimes I have to wait for an epiphany.

So can we talk about *Varroa* mites? Last spring I used Amitraz-based Apivar to knock down *Varroa* mites in some of my colonies and formic acid-based Mite Away Quick Strips (MAQS) in others.

When I went back and tested hives that had been treated with Apivar last spring, I couldn't find a mite. As for the ones I treated with MAQS, I confess I never came back and checked. I can't explain that oversight, but I do get busy sometimes. The hives that got a MAQS treatment were all in the same yard – the one that would give me trouble later.

In the summer, I have five bee yards -- two at high altitude in the Colorado Flat Tops, two right here in the Colorado River valley, one up Garfield Creek across the river. By early August, mites were scarce at four of the yards. But one of the Colorado River valley apiaries had a *Varroa* problem.

It was also on a nice honey flow. I opted to treat for mites with MAQS, because you can use it with honey supers on. My main concern was that I might kill some queens, because this stuff can be touchy with queens. The temperature threshold for treatment is 50 – 85°F on the day of application. The directions go on to state that temperatures greater than 92° during the first three days of application can cause "excessive brood mortality and queen loss."

The 30 hives were on pallets, four hives per pallet. One pallet had screened bottoms. I put in two strips per colony, per label directions, pulling the pollen traps out from under these hives, so as to assure adequate ventilation. This is a lot of work! Then I staggered the brood supers, with the upper overlapping the lower by an inch in the front and two in the back. The offsets differ because these supers have cleats nailed onto them at the top, front and rear, for ease of lifting. In order to overlap an inch in the front, you have to overlap two in the rear.

The weather forecast was 75° for August 19, the day of application, then 80, 85 and 85° for the days following. Actual temperatures ran somewhat higher, with two days topping 90. Naturally I was concerned when it got so hot, but when I started worrying out loud, both my mentor Paul and my gal Marilyn counseled me to not borrow trouble.

The treatment takes seven days. When I opened the hives on day 10, I found some brood damage, but 28 of 30 colonies had a laying queen. One had replacement queen cells and one was a drone layer. Excepting the brood damage, about what I'd expect to find in any 30-hive apiary in August. I breathed a sigh of relief. I did this queen checking on yet another hot day, so I was pretty beat when I got my pollen traps back under these colonies and the still un-harvested honey stacked back on top. Mite sampling would have to wait.

When I returned a few days later I got the bad news. A colony that had sugar-roll tested 10 mites per 300 bee sample in early August now tested 8. One that previously had 15 mites now had 22. One with five still had five. (This one was on a screened bottom board.) A previously untested colony tested at six *Varroa*. These are

not acceptable levels of mite infestation. I guess I could have kept sampling, but I felt I'd seen enough.

I did the best I knew how. I gave my bees lots of ventilation, maybe too much. I treated with temperatures pushing the upper limit of acceptable. I'm not here to cast blame. And I'm not a scientist. I'm just a beekeeper. I was pretty sure all along that I was going to have a dramatic mite knockdown, with some queen loss. But the MAQS proved safe for queens and mites alike.

Ignore *Varroa* mites at your peril. They will eat your little darlings alive. You could choose to not test for them, or not treat for them, again, at your peril. By sacrificing some of your colonies to mites, you might select for survivor strains of bees that can cope with them. But please, do this with your eyes wide open.

Assume nothing. The only way to know is to check. Then, if you treat, test again. Because what worked last year, or what you read in a book or a magazine, or online, might not work for you this time.

Finally, if you're dead sure your car's air conditioner doesn't work, turn it on and try it anyway. You might be surprised.

Ed Colby

An Epiphany

Blue Sky bee supply



CUSTOM LABELS

CHECK OUT OUR NUTRITION LABELS!



WE OFFER BLANK HONEY LABELS!
WITH OUR DESIGNS IN ROLLS OF **250** ONLY



Blue Sky Bee Supply
930 N Freedom
Ravenna, OH 44266

**EVERYDAY
LOW PRICES**

MANY OTHER STYLES AVAILABLE! (price w/o caps)

1 lb inverted deco (364 ct)	\$146.50
3 lb deco jug (126 ct)	\$90.90
5 lb deco jug (72 ct)	\$68.35
8 oz classic (550 ct)	\$146.62
16 oz classic (321 ct)	\$121.95
2 lb classic (168 ct)	\$95.95
6 oz panel bear (600 ct)	\$164.95
8 oz panel bear (525 ct)	\$139.95
12 oz panel bear (400 ct)	\$109.95
16 oz panel bear (228 ct)	\$89.95
24 oz panel bear (195 ct)	\$85.50



Glass Skep 12 oz. Jar
\$10.45/12 ct. case
PALLET pricing
also available

STOCK DESIGNS

FOR MORE DESIGNS | GO TO WWW.BLUESKYBEESUPPLY.COM

We have four sizes, the large oval, medium oval, rectangle, and the hive jar label. We also offer **FULL CUSTOM LABELS.**

Sale! GIFT GUIDE



~~\$114.95~~
\$104.95
~~\$149.95~~ FREE SHIPPING
ON BEEKOOL ITEMS ONLY
\$124.95



**BEEKOOL
FULL JACKET**

RAINBOW CAPS



FLIP TOP CAPS!
AVAILABLE IN 14 COLORS



2 OZ BEAR CAPS!
AVAILABLE IN 12 COLORS



**GET YOUR SEASONAL
COLORED CAPS!**

**BEEKOOL
FULL SUIT**

**SALE ON
BEEKOOL!**

BUNDLES OF 12

4 OZ \$24.50
8 OZ \$25.75
16 OZ \$24.95



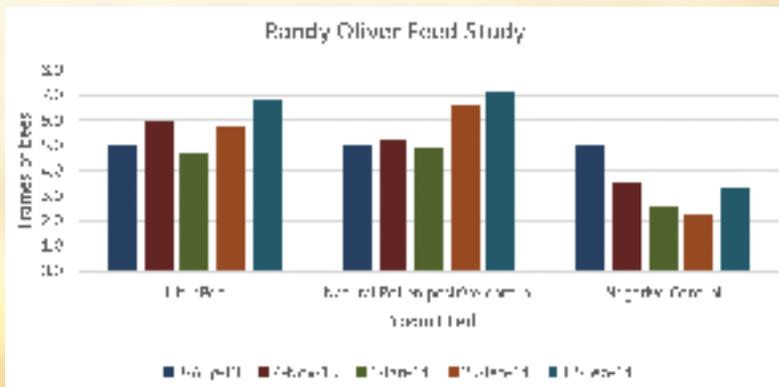
**GIFT
BOXES**

Family Owned & Operated in Ravenna, Ohio 44266
(877) 529-9233 | www.blueskybeesupply.com

HEALTHY, STRONG, ULTRA



- ✓ Increased Brood Production
- ✓ Healthier, Stronger Bees
- ✓ No Animal By-Products
- ✓ A Complete Amino Acid Profile
- ✓ Beneficial Vitamins, Lipids, and Minerals
- ✓ Made with the Finest USA Ingredients
- ✓ Ready to Feed When You Need It
- ✓ Highest Protein Content Available

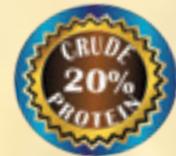


According to research done by Randy Oliver of scientificbeekeeping.com and published in the *American Bee Journal*, August and September 2014, Ultra Bee Patties produced results statistically equal to those of natural pollen.

FD-375 Ultra Bee Patties

40 lb box

~~\$85.95~~



SALE \$68.95

FD-211 Ultra Bee Dry

50 lb bag

~~\$89.95~~



SALE \$69.95



800-880-7694

PRICES VALID
11/1/15 - 11/30/15

MANN LAKE
WE KNOW BEES

An Employee Owned Company

ORDER ANY QUANTITY
SAME FLAT PRICE

www.mannlakeltd.com

*Free shipping applies to most orders over \$100 sent standard ground service within the lower 48 states. Prices are subject to change without notice.