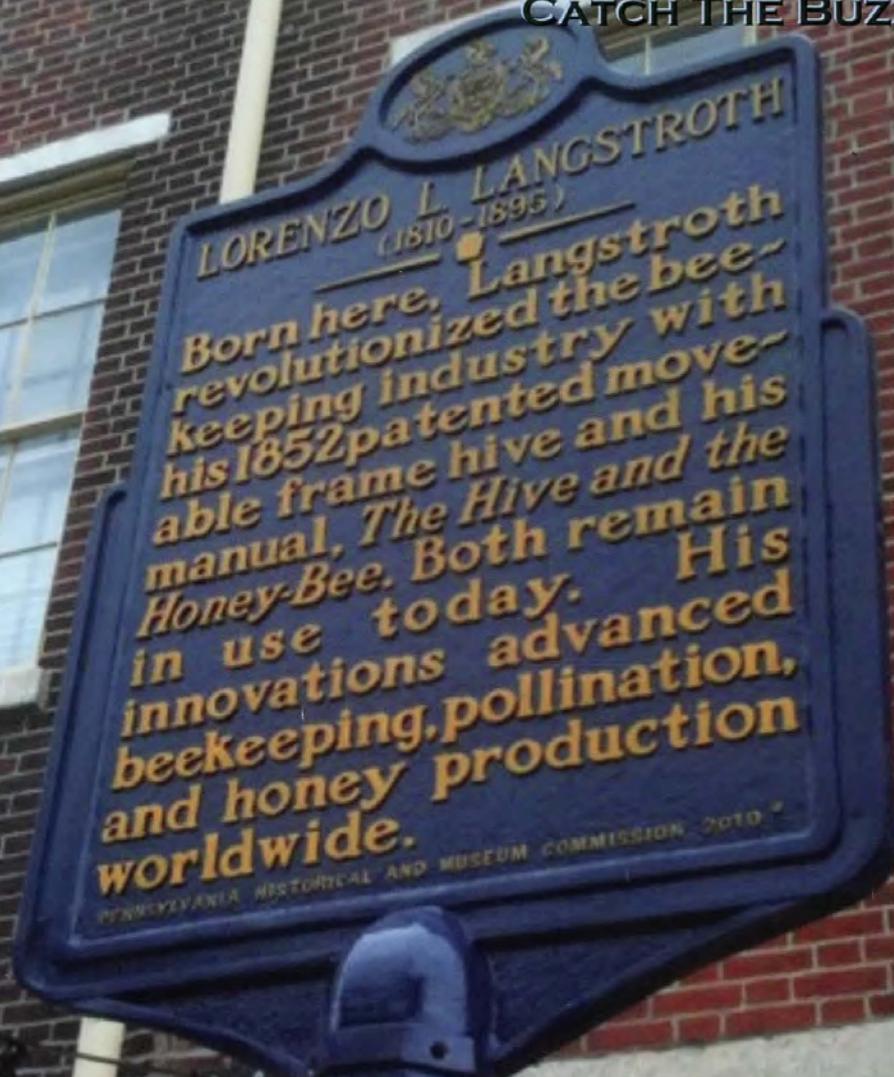


OCT 2010

WWW.BEECULTURE.COM

# Bee Culture

CATCH THE BUZZ



**LORENZO L. LANGSTROTH**  
(1810-1895)  
Born here, Langstroth revolutionized the bee-keeping industry with his 1852 patented movable frame hive and his manual, *The Hive and the Honey-Bee*. Both remain in use today. His innovations advanced beekeeping, pollination, and honey production worldwide.  
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION 2010

**Waterfront II**  
106 S. Front Street  
For leasing information and to make an appointment call:  
**215-351-1535**  
Spokane, WA

## INSIDE . . .

**LANGSTROTH'S DEDICATION - 60**

WAX MOTH IPM - 19

WINTERING - 34

THE FIRST ITALIAN BEES - 62

SHIPPING LIVE QUEENS - 47

**ROOT**  
PUBLICATIONS  
**\$4.99**



7 1547-1717 10



This is the Official State Historical Marker of L.L. Langstroth's birthplace at 106 S. Front Street, in Philadelphia, PA dedicated on September 10, 2010. It was organized by the Pennsylvania Historical and Museum Commission and the Philadelphia Beekeepers Guild . . . and millions and millions of beekeepers. See the story on page 60.

800.289.7668 • www.BeeCulture.com

Publisher – John Root

Editor – Kim Flottum, Ext. 3214, Kim@BeeCulture.com

Production Coordinator – Kathy Summers, Ext. 3215, Kathy@BeeCulture.com

Circulation & Advertising – Dawn Feagan, Ext. 3220, Dawn@BeeCulture.com

#### Contributors

Clarence Collison • James E. Tew • Ann Harman • Kim Lehman • Ross Conrad  
Steve Sheppard • Larry Connor • Connie Krochmal • Jennifer Berry

#### Subscription Information

U.S., one year, \$25; two years, \$48. Newsstand price: \$4.99. All other countries, (U.S. Currency only), \$15.00 per year additional for postage. Send remittance by money order, bank draft, express money order, or check or credit card. Bee Culture (ISSN 1071-3190), October 2010, Volume 138, Issue 10, 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.

#### Contact Information, Book Orders

V800.289.7668 • V330.725.6677, Ext. 3220 • F330.725.5624  
www.BeeCulture.com; email: info@BeeCulture.com

#### Advertising

For information on advertising contact Dawn Feagan at 800.289.7668, Ext. 3220; Dawn@BeeCulture.com; www.bee-culture.com

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

Advertisements are not guaranteed by the Publisher. If you have complaints please let us know so we may investigate.

Opinions expressed in articles or columns in this magazine are not necessarily those of the Editor or Publisher.

Published by The A.I. Root Co. Copyright© 2010 by The A.I. Root Co. All rights reserved.



# Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING  
OCTOBER 2010 VOLUME 138 NUMBER 10

## FEATURES

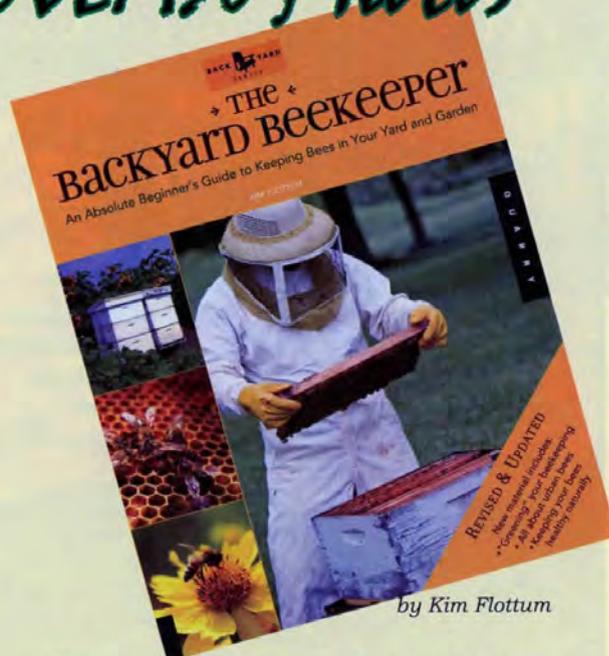
- OBSERVATION HIVES** 9  
*It's time to revise this classic. Can you help? Here's how.*  
Dewey Caron
- WAX MOTH IPM, PART II** 19  
*Use chemicals as a last resort when it comes to controlling this pest.*  
Mike Hood
- THINGS FALL APART: THE CENTRE CANNOT HOLD . . .** 23  
*The periphery and the centre – we need both.*  
Jeremy Barnes
- WINTERING** 34  
*Did Langstroth have it right?*  
Roger Hoopingarner
- TOP BAR VS LANGSTROTH** 39  
*Trying to get two or more beekeepers to agree on the solution to any beekeeping problem can be problematic at best.*  
Ross Conrad
- BUSMAN'S HOLIDAY** 43  
*When beekeepers visit beekeepers, only good things can happen.*  
Duane Waid
- FIXING WINTER KILL** 53  
*Extreme ventilation, and removing condensation are critical.*  
Sophia Sparks
- HONESTY** 59  
*There's hardly ANY honesty and the NUTS are in the Board room.*  
Tom Theobald
- HOME AGAIN – DEDICATING LANGSTROTH'S BIRTHPLACE** 60  
*A historical marker goes up, and L.L. himself comes to see.*  
Kim Flottum
- P.J. MAHAN & THE FIRST ITALIAN BEES** 62  
*It wasn't Wagner after all.*  
Matt Redman

## DEPARTMENTS & COLUMNS

<b>MAILBOX</b>	7
<b>THE INNER COVER</b>	10
<i>Customer service.</i>	
	Kim Flottum
<b>HONEY MARKET REPORT</b>	12
<i>Weather, or not.</i>	
<b>NEW PRODUCTS</b>	13
<i>Books – Bees, Wasps, and Ants; The Hive Detectives.</i>	
<b>A CLOSER LOOK – PHEROMONE DISTRIBUTION</b>	15
<i>Queen mandibular pheromone is a complex of at least five chemical compounds.</i>	
	Clarence Collison & Audrey Sheridan
<b>QUEEN MANAGEMENT USING PACKAGES, OR NUCS</b>	26
<i>Are nucs a better way to go?</i>	
	Larry Connor
<b>GETTING INTO BEEKEEPING – STAYING IN BEEKEEPING – GETTING OUT OF BEEKEEPING</b>	31
<i>Two things that all beekeepers do – start beekeeping and stop beekeeping.</i>	
	James E. Tew
<b>SHIPPING LIVE QUEENS</b>	47
<i>Guaranteed on time, but dead, or alive but who knows when? Postal frustrations.</i>	
	Jennifer Berry
<b>ELECTION TIME!</b>	57
<i>Who does what in your association? A good job description will help.</i>	
	Ann Harman
<b>BOTTOM BOARD</b>	72
<i>Read the book.</i>	
	Ed Colby

**GLEANINGS-65, CALENDAR-68,  
CLASSIFIED ADS-69**

# Over 200 Pages Over 150 Photos



by Kim Flottum

## The Backyard Beekeeper 2nd Edition Revised & Updated

All New Information On

- Urban Beekeeping
- Equipment Assembly
- Survivor Bees, Russian Bees
- Waxing Frames
- Honey Bee Nutrition
- Beekeeping History
- Propolis
- Replacing Queens
- Non-Chemical & IPM To Control Varroa, Small Hive Beetles, AFB
- Comb Honey Production
- Solar Wax Melters
- Soap Making
- Encaustic Painting
- Colony Collapse Disorder

# \$29.95

Postage paid in the U.S.  
Call for Foreign Rates

To Order Visit

**www.BeeCulture.com**

Send Check To Bee Culture Publications,  
623 West Liberty Street, Medina, OH 44256  
or call with credit card

800.289.7668, Ext. 3220

J  
u  
s  
t  
R  
e  
l  
e  
a  
s  
e  
d

## Smoker Fuel

I was reading the letters in the August issue and noticed someone mentioned "The Best Smoker Fuel" he states he uses chainsaw cut wood shavings. You might want to remind readers that chainsaw wood shavings will almost certainly contain chainsaw bar oil. If you are unfamiliar with chainsaws, you add oil to the saw that lubricates the blade as it cuts. This oil is transferred to all exposed cut surfaces. In fact there is so much of it, that whenever you want to see if the oil is flowing properly you can just point the tip of the blade and bar at a stump and rev up the motor. Oil will be thrown off onto the stump, showing that the oil is indeed flowing correctly.

It's probably not the best smoker fuel for the bees. Although as the author states, I'm sure they do "...start very easy and produce abundant cool smoke." But that smoke contains toxic fumes from burning oil.

Matt Powell  
Hanover, VA

## The Other Georgia

I'm a young professional beekeeper in the country of Georgia, Europe (former USSR). I own a business in this field and am very successful, as the interest in beekeeping grows in my country rapidly. I have eight years experience in beekeeping.

I have already established "Young Georgian Beekeepers Group" and would like to make

international connections through this group, which will benefit every side.

Let me be a little more specific here: We want to find partners in the U.S., and organize a special group which will visit the U.S. next season to learn new techniques of Bee Farm Management. We both will benefit: we will learn from you a lot, and you can find a work force.

We believe that *Bee Culture* can find available Bee Farm for us.

If you have any questions, please feel free to contact me back.

David Kvinikadze  
Georgia, Europe  
Kvinikadze.david@gmail.com

## Wintering Solution

I receive *Bee Culture* second-hand and currently have the Feb 2010 issue in hand. In the letters from readers, there is one from Harold Boretz of East Hampton, CT, who wants to know about wintering over bees.

My husband and I live in north central Ohio in a very windy area – a wind farm is planned for our area. The temps on our farm are usually eight to 10 degrees below town temps. We began winterizing our bees three years ago. We began with one healthy colony and they made it through the first winterizing experiment. The next Spring it swarmed twice, but the bees

## Bee Culture Information

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

Suggestions

Comments

were gone before we could catch them. This Spring our main colony swarmed four times. We were able to capture three; now we have four healthy colonies.

Our hives are located about 50 ft away from the south side of our barn (blocked from the north wind), hive openings face our woods to the east. When the cold begins in earnest, we staple tar paper around the hive, leaving just the opening uncovered. Then, because of the wind, which drives down temps, we stack straw bales close around the three sides up to the top. The bale stack in the front is v-shaped and about two to three feet away from the entrance, so that the bees can escape when/if it warms early. We gradually take down bales and take off the tar paper as the weather warms consistently.

I hope this information can help other beekeepers.

Deborah S. Cochran  
Shelby, OH ↩

## 2010 Prices

### Gardner's Apiaries Spell Bee Co. LLC

### PACKAGE BEES AND QUEENS

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

#### \*Hybrid Italian Queens

1-9 .....	\$18.00
10-24 .....	\$16.00
25-100 .....	\$14.00
100+ .....	\$13.00

Pick-up Queens . . . \$13.00    Cells . . . \$3.00

\*Above prices do not include shipping. Queens clipped or marked add \$2.00 each.

Package return – \$1.50 each • Riteway Queen Shippers upon request.

**Please call or write for shipping details.** Truck Loads Still Available

Terms: 10% down. Balance due 2 weeks prior to shipping.





## Robbing Their Sisters

In an apiary of 25 colonies, a friend of mine had two colonies stacked seven supers high the last week of May. He wondered where they were getting the nectar from, as the other colonies weren't finding any. I told him I suspected they were robbing their weaker sister colonies. He asked me what to do?

I would split those colonies. Take the queen and most of the capped brood and most of the bees and move them at least two miles away – reduce these robbers down to the same stance as the weak colonies so they would have to stay home and not be strong enough to be out robbing other hives.

I don't know enough about raising queens, so I'm wondering if the tendency to rob might be inher-

ited by the virgin queens? Maybe you or Jim Tew, Larry Connor or other professors can answer it. I very much would like to hear their opinions.

We here in Michigan had a cold and wet May – very little feed for the bees so they were late building up. However, there are some swarms around. It looks like a light crop at this date. Bees out on their own in the wild seem to be making a come back.

Herbert Iseler  
Peek, MI

## Subscribe Today!

visit us online at: [www.farmingmagazine.net](http://www.farmingmagazine.net)



A Quarterly Publication

1 year - \$18 (4 issues)

Canadian subscribers: \$24

2 years - \$32 (8 issues)

Canadian subscribers: \$45

Please 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"

# BackHome

Your Guide to **MAGAZINE**

## Self-Reliant Living

Take control of your life. Thousands of people have gone BACKHOME to enjoy less complicated, more rewarding lives . . . and you can join them. In each bimonthly issue, find articles on topics such as:

- Owner-Built & Mortgage-Free Homes
- Solar, Wind, & Hydro Power
- Profitable Home Businesses
- Livestock Selection
- Organic Gardening
- Home Projects and much, much more!



Subscribe for just \$21.97/year

Call us at

800-992-2546

Write to us at

P.O. Box 70BC

Hendersonville,

NC 28793

Or visit our

Web site

[www.BackHomeMagazine.com](http://www.BackHomeMagazine.com)

# THE BEST QUALITY & THE BEST VALUE

## MANN LAKE UNASSEMBLED FRAMES

made in USA

Works with all uncappers

Unparalleled fit and finish

High precision cuts

Full 1/2" bottom bar is 33% thicker

**FREE**  
Shipping\*



Hackensack, MN

[www.mannlakeltd.com](http://www.mannlakeltd.com)

**MANN LAKE**  
WE KNOW BEES

**800-880-7694**



Woodland, CA

[www.mannlakeltd.com](http://www.mannlakeltd.com)

\*Free shipping applies to most orders over \$100 shipped ground service within the continental US. Free shipping offer valid through 12/31/10.



# Time To Revise!

Dewey Caron, Kim Flottum

The Popular A.I. Root Company book *Observation Hives, How To Set Up, Maintain and Use A Window To The world Of honey Bees*, by Tom Webster and Dewey Caron is due for a revision and update. The first edition, published in 1999, included ideas from individuals using Observation hives. We would again like to include Observation Hive innovations you might be using, plus novel uses of observation hives you have found and incorporate some of them into the second edition.

Observation hives are an attractive and educational tool and we know they are being used in some extremely creative ways. Are you using an observation hive in a different or unusual way? Have you a design you find especially useful in your teaching program? Would you be willing to share – photos, designs, ideas – for possible use in our update?

Dr. Caron recently finished a couple of presentations on observation hives in the Midwest. There, Glenn Harbringer was kind enough to bring three observation hives to demonstrate and share with the audience at the Ag & Natural resources week in Michigan. He built and has been using an Ulster Observation hive for several years – before they were available from Brushy Mountain Bee Farm. He built a tray to hold the Observation top to separate the two so he could leave his Observation hive in the apiary. He and others have found the Ulster Hive or some variation of it to be a convenient way of creating and showing off bees. It allows you to “instantly” create and then quickly “break down” a nuc into an observation teaching tool.

Attending the COMB (Center of Michigan Beekeepers) monthly meeting, Barbara Hoopingartner wondered if this hive concept would “work” if a beekeeper had nothing but medium frames. Has anyone built one with mediums? City and suburban beekeepers, young and old alike, often prefer medium size supers and frames over the standard Langstroth dimensions for ease in lifting

and manipulation. Mixing a standard and medium for the brood chamber, common with commercial beekeepers with their palletized beekeeping operations, doesn't permit free interchange of frames within a hive. But how would the Ulster concept fare if two frames are elevated or if the observation portion is only a medium high? Anyone know?

2010 is the 200<sup>th</sup> birthday anniversary of L.L. Langstroth. It is a great time to discuss Observation hives. Langstroth wrote (in 3<sup>rd</sup> edition- Pg 23) “I have had the pleasure of exhibiting these facts to beekeepers who never before felt willing to credit them.” He was referring to the ability to lift a frame from his new movable comb hive and show the queen laying her eggs in drawn comb – in his words – “perform all necessary operations without injuring a single bee” not the fact that he used glass for his hive bodies (beneath the outer wall) of his new hive.

But creativity isn't the only update we are looking for. There is a whole world of management tricks that exist and are waiting to be shared. Easy requeening. Swarm control. Removing frames. Pest and disease control. Feeding. Child proofing. Materials and construction.

All of the nuts and bolts of constructing and managing an observation hive so it is easy to use, easy to fix, easy . . . just easier, and safer, and better.

So this is a call for all of you observation hive users who have modified, created, designed, or developed a better way to show off bees. YOU KNOW WHO YOU ARE! We welcome your input and will seek to incorporate your contributions into our revision of *OBSERVATION HIVES*. Send them in the next couple of months to me ([dmcaron@udel.edu](mailto:dmcaron@udel.edu) or to *Bee Culture* editor Kim Flottum ([Kim@BeeCulture.com](mailto:Kim@BeeCulture.com))). **BC**

*Dewey Caron, emeritus Professor, University of Delaware now resides in Oregon where he is Affiliate Professor at Oregon State University. Kim Flottum is Editor of Bee Culture Magazine, and presently helps manage two of these beasts with Kathy Summers.*



Ulster Observation Hive



Texas Honey Queen Jessica Coker, at Houston Rodeo Observation Hive.



# INNER COVER

**W**hen almond pollination comes up in a conversation, in your mind's eye you get a picture of a placid, slightly rolling landscape covered with rows and rows of almond trees, everyone abloom. The rows sway and swim with the lay of the land and in your picture they always run just a little bit angled, front to back, so individual rows blend

and merge and form a floral carpet into the distance, gradually melting into the sky and clouds and the mist of a foggy California morning. And in the distance, barely visible mountains, some peaked with snow just to give you a sense of the scope of it all. In the foreground there's always a few pallets of bees, and maybe a few more just visible over there on the edge, the boxes are white but never quite new. The picture is of perfect blossomed rows and nearly perfect honey bees. A match made in heaven.

The almond industry would certainly like everyone to believe this colorful, placid image of modern, successful agriculture. If you look a little closer, just beneath the petals the subtle message being sent is the promise of production beyond the imagination of mortal man. For those who want to be a part of this, the first impression is to be one of total awe and humble pride at being a cog in this fertile machine. But further down, amongst the branches, past the awe and pride is the real message, the one you are to leave with. This is a picture of complete and total control, of intimidation and dominance of anyone who thinks they could compete on this scale with these skills. But more importantly there's a loud and clear message of raw power to anyone who would consider disrupting this money-making, export-generating, food producing machine. Play nice and you'll do well with us is what you hear if you listen carefully... don't, and you won't.

This single California crop chews up at least 70 to as much as 95% of all the honey bee colonies in the U.S. between October and April every year. Staggering winter losses most years have cut the numbers available and raised the percent chewed, and every year bees from Oz change the formula, fill the gaps with poor substitutes and weaken the mix even further. During this half year more than 80% of the commercial beekeepers in the U. S. scramble to meet the demands of the dream sellers. Play by the rules, use our calendar, march to our drummer and we'll give you a nugget of California gold once again. Half a year is spent getting ready for those four pretty weeks in an almond orchard. They have taken their toll however, those six months.

It's a no win for beekeepers. The cost of living, bee's living that is, is so high now, figure about \$200.00 per colony per year, that honey isn't even close to paying the bills anymore, even when there's little honey to be had and the price edges up . . . like last year, and like this year again. They'd need about 130 pounds from every colony to break even. That isn't impossible, but that's from every colony . . . not just those that stay alive all Summer, and lots can't even do that. Profit, then, must come from the pollination side of the business, and right now, figure only 20 - 30% of commercial income comes from honey, while 70 - 80% comes from pollination. Without question, financial floral infusions are needed just to keep breathing, and almonds take the deepest breath. And since Spring and Summer and Fall and Winter colony and queen losses continue unabated and are unyielding, beekeepers continue to swim upstream, seldom gaining, often losing ground every second they're afloat. And with no solutions on the horizon from the ivory towers, the future doesn't look much better.

There's something like 6,000 almond growers tending over 740,000 acres of California almond land today, and next spring at least 20,000 more acres of these money trees come online as producers. All told, that means California is going to need 1,900,000 colonies, at the 2.5 colonies/acre figure to

make a profit on those money trees (and make sure their crop insurance covers their respective, ahh, crops). Realistically, I'm told there will be closer to 2.2 colonies/acre, or about 1,675,000 colonies sitting amongst all those petals in the sweet California sunshine during February and March next year.

Now, considering there's about 2.5 million or so colonies being run by commercial outfits right now, maybe, means about 67% of the commercial bees in the U.S. will be needed in almonds next Spring . . . that's two thirds by the way . . . it's a lot more

## Customer Service

(Inner Cover photo taken by Kathy Keatley Garvey)

than half now, a lot more. Now, will there actually be that many going into winter? Maybe, maybe not. Real early reports indicate another poor honey crop...which means beekeepers will be scratching for food for bees, again (and maybe staying home to make even higher priced honey next year). But what about that annual 33% loss every winter from...well, what difference does it make what it's from - starvation, CCD, Nosema, cell phones or beamed up by Scotty - and you have available right about 1,750,000 colonies at best available for those almond fields. Which means, if you take this to its logical conclusion there's only 75,000 or so colonies blowin' in the wind...maybe in almonds, maybe not...maybe strong enough, maybe not. That's a 3% margin by the way. Which is about what beekeepers make on most things they sell, so it fits, doesn't it?

I make money for my company by providing a product for my customers that has a value to them. We provide pretty good customer service and we try to make sure our customers are satisfied with the products we produce. Now, if I was an almond grower, you know what I'd be thinking? I'd be thinking customer service wouldn't be such a bad idea right now. I'd be thinking, maybe if I made sure my beekeeper had a good, no, a GREAT place to put bees in October so he didn't have to search for a safe and secure place...maybe if I planted some forage for those bees of his, and provided water...and irrigated the forage plants the bees would do better...maybe real plants would be a better diet than the sugar and soybeans needed to get colonies up to the unrealistic February 1 strength of 8 frames of bees and brood.

In fact, if I was the almond *industry*, and absolutely everything I depended on for my whole, entire crop sat on the pallets of the beekeepers we hired every Spring, maybe we'd all be better off if all the beekeepers that came out here had a better place to be . . . in late Fall when they arrived, and after they were moved out of the orchards until they could go home after blossom.

Or do you think they'll gamble on bees from OZ again, and that 3% margin? Would you?

But let's take this one step further...If I was an apple grower, cuke, alfalfa, seed, sunflower, canola or any

other crop grower that needed bees sometime during the season, maybe I'd be taking a lot better care of those little fuzzy customers. Maybe, if I put profit in the long run on an even keel with profit in the short run, everybody would do better and I wouldn't have to scramble every year looking for another beekeeper to replace the one I had last year, (yeah, remember, the guy I paid as absolutely little as possible, and paid late, and even fibbed to when I said how many I needed and there was another beekeeper I'd been talking to who could do it for less), that for some reason is now out of business? Remember him? No? It doesn't matter, there's another one out there somewhere, looking for my money . . .

It used to be, beekeepers in the pollination business worried about customer service...be on time, have enough colonies of the right strength and get out on time, and don't ever, ever over charge. I used to preach that gospel on these pages to good beekeepers who wanted to make a living in the pollination business. That was good customer service. It still would be if things still were the way they used to be.

But maybe . . . no, not maybe any more...*now* the shoe must be on the other foot . . . *now* it's . . . please, can you come, we'll find a nice, safe place for you to stay, good food to eat, and a place to rest and relax when you're done so you can come back again, and we'll pay you what you're worth from now on, not what we can get away with . . . Please?

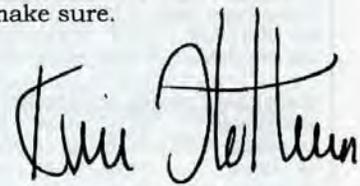
What do you think?

Milk and Honey and raffles don't mix, it seems. Last month we announced a raffle for the original painting of the cover we had . . . cows and beekeepers, remember? . . . to be held at the Wisconsin State Beekeeper's meeting this Fall. It seems that the announcement was a bit premature,

and they won't be able to hold the raffle this year due to some ridiculous raffle regulations being rigidly enforced. So they plan on holding the raffle at a future meeting when the rules are all sorted out, and we will announce it right here when they do. If you liked the cover last month, it'll still be that good later, and now it has all sorts of history tied to it, making it, I'm sure, worth much more than before . . . just ask the Wisconsin Beekeeper's President . . .

Yes, the magazine is being delivered to your door later than usual this month, for a very good reason. Inside, on page 60 is our Exclusive story on the Dedication Of The Historical Marker placed at the birthplace of L. L. Langstroth in Philadelphia. The date of the dedication was the day we were to go to press, so we held off for a few more days so we could bring you this story. It is so much a part of the 200th Anniversary of Langstroth's Birth that we could not in good conscience wait another month to share this event with you. We're sorry you couldn't make it . . . Hundreds attended some part of the many events highlighting the weekend . . . but please enjoy the photos and story of the Dedication.

Be sure your bees have enough food...it's been a weird summer and fall, and there's lots and lots of hungry bees...mine, yours and his. Check again, and make sure.



# OCTOBER - REGIONAL HONEY PRICE REPORT

soybeans, tulip poplar, basswood and honeysuckle are the main crops.

**Region 8.** Just a tiny bit too wet in the Spring led to a warm, dry Summer. But Fall was hot, and way too dry. The Fall crop doesn't look good, and colonies are only OK. Clovers, wild flowers, locust, and soybeans are major crops here.

**Region 9.** Spring weather was basically OK, Summer was warm and dry as was Fall. The Fall crop doesn't look too good though, an colony conditions are only average. Honey crops are Youpon, bettany and tallow.

**Region 10.** Spring was too cool and wet, but Summer was hot and dry...go figure. Fall was dry, dry dry. The Fall crop was average to less than that, and colony conditions are at best average. Crops include clovers, alfalfa and soybeans.

**Region 11.** A cool wet Spring was followed by a too warm, dry Summer, but Fall has been mostly OK. Fall crop is about average and colonies are in good condition so far. Crops include Sage, knapweed, alfalfa, clovers, and wildflowers.

**Region 12.** A cool, wet but not too bad Spring was followed by a mostly average Summer and a hot, dry Fall. Fall crop looks OK and colonies are in good condition, so far. Crops include citrus, alfalfa, cotton, vetch, berries, sage, wild buckwheat, the acacias and even avocado.



Whatever the weather, we have to put up with it, and it makes a difference in our honey crop and the condition of our bees. So we checked each region for the weather for Spring, Summer and Fall, the honey crop and colony conditions, and what they made honey on this year...

**Region 1.** An OK to too warm Spring, a hot, dry Summer and Fall. A poor Fall crop seems to be at hand, but bees are in good shape. Clover, wildflower, locust, alfalfa, fruit, and berries make up most of the crops.

**Region 2.** An OK to too warm Spring, a hot, wet Summer, and an OK Fall. A great Fall crop and colonies in good condition. Clover, wildflowers, basswood, fruit, berries and tulip poplar are major crops.

**Region 3.** A cool, wet Spring was followed by a hot dry Summer and a warm, dry fall. The Fall crop isn't all that great, but colonies are in good condition now. Clovers, wildflowers and tulip poplars are good crops here.

**Region 4.** An OK to too damp Spring was followed by a hot, dry Summer and Fall was mostly dry and warm. The Fall crop is far below average, and colonies are not in great, but OK shape. Clovers, locusts, basswood, olives, wildflowers, black cherries and berries are good crops here.

**Region 5.** Spring was cool but not bad, but Summer was really warm as was Fall. The Fall crop looks good, and colonies seem to be in pretty

good shape. Citrus, wildflowers, pepper and palmettos are the big crops.

**Region 6.** A cool Spring was followed by a warm and wet Summer, but it stayed warm and dry into Fall. A good Fall crop is on hand, and colonies look to be in good shape. Clovers, tallow, privet, cotton, locust tulip poplar, soybeans and gallberry are the main crops in this region.

**Region 7.** A long, cool, wet spring was followed by a very wet, and very hot Summer. Fall has been warm, but wet in some places, but warm and dry in others. Overall the crop for the region was average, but there are places it is way short. Colonies look to be in average shape. Wildflowers, clovers, locust, alfalfa,

## REPORTING REGIONS

	REPORTING REGIONS												SUMMARY		History	
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Year
<b>EXTRACTED HONEY PRICES SOLD BULK TO PACKERS OR PROCESSORS</b>																
55 Gal. Drum, Light	1.63	1.85	1.63	1.48	1.60	1.75	1.61	1.60	1.63	1.58	1.50	1.58	1.48-1.85	1.62	1.65	1.41
55 Gal. Drum, Ambr	1.79	1.65	1.79	1.48	1.50	1.48	1.85	1.60	1.40	1.55	1.44	1.45	1.40-1.85	1.58	1.50	1.22
60# Light (retail)	130.00	127.00	130.00	135.00	120.00	147.50	131.50	155.00	137.52	137.52	149.67	160.00	120.00-160.00	138.39	134.49	137.02
60# Amber (retail)	130.00	119.00	130.00	135.00	120.00	145.00	121.40	146.67	100.00	129.73	137.80	163.15	100.00-163.15	131.48	126.89	128.44
<b>WHOLESALE PRICES SOLD TO STORES OR DISTRIBUTORS IN CASE LOTS</b>																
1/2# 24/case	55.20	61.98	45.68	54.00	66.97	54.00	46.24	66.97	66.97	48.00	48.20	65.75	45.68-66.97	56.66	58.20	59.07
1# 24/case	73.56	82.78	72.00	68.40	108.00	92.00	79.10	89.20	89.88	99.84	76.13	101.08	68.40-108.00	86.00	81.88	76.46
2# 12/case	73.80	75.82	66.68	63.00	94.50	78.00	70.33	81.00	54.00	81.00	61.00	83.28	54.00-94.50	73.53	71.59	62.45
12.oz. Plas. 24/cs	68.16	69.98	50.40	71.50	60.00	76.50	62.97	78.40	72.49	58.20	71.64	73.95	50.40-78.40	67.85	66.22	65.02
5# 6/case	79.50	85.49	78.00	72.75	84.00	99.00	79.08	85.50	75.68	72.60	65.70	93.33	65.70-99.00	80.89	79.19	72.83
Quarts 12/case	98.11	110.88	98.11	111.40	90.00	101.25	100.20	103.00	98.11	94.75	96.45	111.25	90.00-111.40	101.13	115.83	103.37
Pints 12/case	69.64	56.95	69.64	73.33	61.50	61.00	63.60	68.40	69.64	68.40	65.50	71.33	56.95-73.33	66.58	73.51	65.61
<b>RETAIL SHELF PRICES</b>																
1/2#	3.00	3.30	2.49	3.28	4.02	3.00	3.00	1.89	4.02	3.15	2.94	3.50	1.89-4.02	3.13	3.35	3.29
12 oz. Plastic	3.50	4.08	3.10	3.80	5.10	4.25	3.24	4.10	4.00	3.49	3.93	4.66	3.10-5.10	3.94	4.02	3.77
1# Glass/Plastic	4.00	4.74	4.72	4.63	5.43	5.17	4.47	5.26	5.64	5.08	4.94	6.91	4.00-6.91	5.08	4.85	4.70
2# Glass/Plastic	7.50	7.87	8.91	7.38	9.50	8.00	7.56	8.77	5.50	9.40	7.66	8.50	5.50-9.50	8.05	8.19	7.83
Pint	7.70	7.36	7.50	6.57	6.15	6.61	7.09	7.31	7.70	7.00	7.23	8.75	6.15-8.75	7.25	8.18	7.29
Quart	13.12	9.95	12.50	11.19	12.00	10.94	11.94	11.58	13.12	12.38	10.78	15.16	9.95-15.16	12.06	13.08	11.42
5# Glass/Plastic	19.00	16.34	20.95	17.80	20.50	20.00	21.56	18.50	24.20	17.95	16.12	22.88	16.12-24.20	19.65	19.50	17.30
1# Cream	11.83	6.11	6.50	5.98	11.83	5.50	7.94	6.39	8.85	4.90	5.74	6.50	4.90-11.83	7.34	8.98	5.49
1# Cut Comb	6.50	5.78	6.50	5.48	7.75	6.83	6.97	6.50	7.75	9.00	7.55	10.00	5.48-10.00	7.22	7.14	6.84
Ross Round	5.50	5.65	6.50	5.00	5.26	6.50	6.20	5.26	5.26	5.26	6.92	8.25	5.00-8.25	5.96	6.46	5.73
Wholesale Wax (Lt)	3.25	4.00	2.50	3.67	2.15	4.92	3.90	4.50	4.43	5.00	2.91	3.95	2.15-5.00	3.76	3.98	3.47
Wholesale Wax (Dk)	3.00	3.48	2.50	3.43	2.00	4.50	3.10	3.75	3.54	3.54	2.60	3.50	2.00-4.50	3.25	3.72	3.67
Pollination Fee/Col.	90.00	85.00	70.00	45.00	90.00	72.50	52.33	75.00	88.32	88.32	62.50	125.00	45.00-125.00	78.66	82.23	72.60

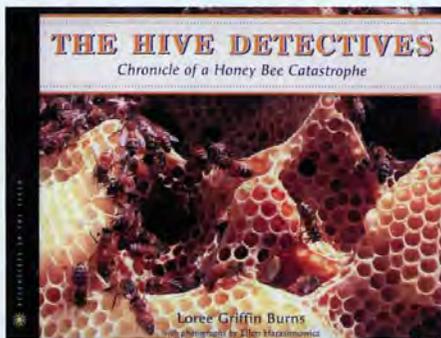
# Books To Read

*The Hive Detectives. Chronicle of a Honey Bee Catastrophe.* Written by Loree Griffin Burns, photos, for the most part, by Ellen Harasimowicz. Published by Houghten Mifflin Harcourt Publishing Company. ISBN 978-0-547-15321-8. 9" x 11". 66 pages. Color throughout. \$18.00.

This past Summer I was talking to Mary Duane at the EAS Conference in North Carolina. She asked when I was going to review the book entitled *The Hive Detectives* the publisher had sent to my office some time ago. I get a lot of books sent here, but I don't miss many . . . none in fact, if they make it through the door. I hadn't seen it. Mary was disappointed, but said she'd find out why . . . two weeks later the book arrived. It was worth the wait, and the extra work by Mary, who, it seems, is actually one of the stars of the book.

For there are many stars in this book. The honey bee certainly has the lead role. Loree Griffin Burns has written three books here, all aimed at people who don't know about bees, beekeeping and now Colony Collapse Disorder. It is specifically written for older children . . .

There's Mary Duane, a six colony backyard beekeeper who leads us through her hives, talks about her bees, examines her colonies, and harvests her honey. It's an education right there. And the honey bee



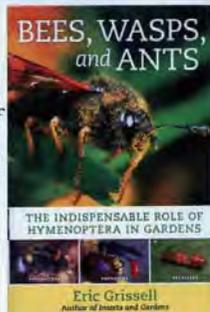
. . . her life and times, her biology, her anatomy and her relationship with beekeepers, and with the flowers she pollinates.

And of course there are the Detectives. All familiar names by now . . . Dave and Davey Hackenberg, Denis vanEngelsdorp, Maryann Fraizer, Jeff Pettis, Diana Cox-Foster and all the rest of the support researchers studying this problem.

You can easily use this book just to learn about honey bees, or to learn how beekeepers work their bees, care for them and work with them so both bees and people benefit, or to get a good grasp on the whole of what has happened to the beekeeping, and agricultural world since the beginning of this mystery.

Well written, accurate, and extraordinary photography and design make this the book to have for kids and adults who want to know more about the subject we all take for granted. Thanks for sending it along Mary. – Kim Flottum

*Bees, Wasps and Ants. The Indispensable Role of Hymenoptera In Gardens.* Eric Grissell. Published by Timber Press. ISBN 978-0-88192-988-1. 320 pages, 6" x 9". Color throughout.



We reviewed Eric Grissell's last book published by Timber Press about 10 years ago, *Insects and Gardens*, and it remains one of the better used books on my gardening bookshelf. His books are well organized, well written, fun to read and because of a lifetime of study, as good as they get on the subject. I've sold a lot of these books for Timber I imagine with the recommendations I make for the book, and the follow up I see after friends look through it . . . which I won't lend, by the way.

Dr. Grissell has done it again. The secondary title about Hymenoptera is exactly right, as he focuses this time on the many members of this order, and the even more roles they play in your backyard garden. The timing couldn't have been better I think, as the whole world is paying attention to pollinators, which many of the hymenoptera are, but also to the diverse flora and fauna that exist everywhere that we are rapidly plowing under in favor of crop monocultures and concrete.

This book explores the importance of the Hymenoptera and explains how gardeners can encourage (or discourage) them from the garden. The first part of the book looks at the impact of the insects on our lives, a summary of their biology – which is complicated enough to be interesting, but is handled so probably almost everybody can understand – everybody who wants to garden anyway – and the roles each play out in the garden.

The second part of the book goes one on one with the individual groups – some you are familiar with probably, and many not – sawflies, horntails, the parasitic wasps we depend on more than you realize, of course bees – our mainstay – and the wasps. Good guys sometimes in bad places.

If you are a gardener, or are concerned about the status and precarious position of the wild pollinators of the world, or cannot imagine a day without some form of wild nature in your life, you will enjoy this book. But don't lend it out.

Kim Flottum

PACIFIC NORTHWEST BRED QUEENS

VSH/RUSSIAN/WILD  
SURVIVOR STOCK  
OLYMPIC WILDERNESS APIARY



HYGIENIC • MITE RESISTANT

Selecting for Nosema Tolerance  
Isolated Mating Yards

Hardy. Work@Cooler Temperatures

-No Package Bees -

Queens Available Summer and Fall Only

866.204.3426 (toll free)

www.wildernessbees.com

nozevit 

Looking for an All Natural Solution  
for your honey bees health?

- All Natural Honeybee Food Supplement.
- Available in 6 convenient sizes ranging from 3ml to 5 Litre.
- Simply add 1ml of Nozevit to 1 cup sugar syrup per feeding and apply by drench method.

For greater productivity  
choose Nozevit!

For more detailed instructions  
and to locate a dealer near you,  
visit us online at Nozevit.com

(907) 727-8200

Innovation - not imitation.

Nozevit International © International Patents, Registrations and Copyrights apply.



# A Closer LOOK



## PHEROMONE DISTRIBUTION

Clarence Collison

Audrey Sheridan

*The retinue of workers typically associated with the queen removes the greatest fraction of the queen's pheromonal production. Not all bees in the retinue pick up and transfer the same amount of pheromone, however.*

Queen mandibular pheromone (QMP) is a complex of at least five chemical components [9-keto-2-(E)-decanoic acid (9ODA); 9-hydroxy-2-(E)-decanoic acid (+/- 9HDA); methyl p-hydroxybenzoate (HOB); and 4-hydroxy-3-methoxyphenylethanol (HVA)]. Winston and Slessor (1992) determined that a queen typically has five micrograms, or 0.001 Qeq (Queen Equivalent) of pheromone on her body at any one time. One queen equivalent (Qeq) of pheromone is the average amount of QMP contained in the glands of a mated queen (Slessor et al. 1988) and is roughly equal to the daily secretory rate of a laying queen (Naumann et al. 1991). To determine how much a queen secretes daily, queens were removed from colonies and the amount of pheromone that built up on their cuticles was measured (Winston and Slessor 1992). A queen secretes between 0.2 and 2.0 Qeq of pheromone per day and a worker bee is able to sense a ten-millionth of the queen's daily production (Slessor et al. 1988, Kaminski et al. 1990).

All major body parts of typical queens, especially the head and legs, have sufficiently mandibular exudates to be highly attractive to worker bees presumably as a result of grooming (Slessor et al. 1990). Butler (1954) found that honey bee workers could obtain queen mandibular pheromone from any part of a queen's body, suggesting that it had been moved backwards from its glandular source in the head, but the mode of this movement was not investigated. The queen facilitates pheromone dispersal by frequently standing stationary, at which times workers can thoroughly contact her, and by occasionally making a major shift in her position within the nest (Seeley 1979). Airborne dispersal of pheromone is at most a minor mechanism of dispersal since the chemical components of the pheromone are not particularly volatile.

In a colony, the queen is usually surrounded by a number of workers, the retinue, which remove pheromone from her body surface (Naumann et al. 1991) before leaving for approximately 30 minutes of intra-nest movement and frequent worker-worker contacts (Seeley 1979). The function of the retinue and the subsequent worker behaviors are thought to ensure that queen mandibular pheromone is quickly transferred from the queen throughout the nest. Evidence of the effectiveness of such a system is given by the observation that workers show behaviors associated with queenlessness within as little as 30 minutes after queen removal (Seeley 1979).

A queen contacts approximately 35 percent of the broodnest workers in

10 hours. Thus a significant portion of queen substance dispersal occurs through direct queen-worker contacts (Seeley 1979). However, the queen-worker contacts fall far short of totality for the broodnest bees. Even after 15 hours the queen contacted fewer than half of the marked bees. Thus worker transport plays a large role in pheromone dispersal.

The retinue consists of up to 12 workers that contact the queen with their antennae, forelegs, and/or mouthparts. Following these contacts, the workers generally groom themselves prior to moving throughout the colony. Self-grooming resulted in the translocation of synthetic queen mandibular gland pheromone



*"A queen contacts approximately 35 percent of the broodnest workers in 10 hours."*

from the mouthparts and head to the abdomen of honey bee workers (Naumann 1991). Specific grooming behaviors associated with workers in or just leaving the retinue included: antennal cleaning, head cleaning, mouthpart grooming, and thorax and abdomen grooming. These observed grooming behaviors do not appear to function solely for pheromone translocation. Movements involving the forelegs were the same as those in Jander's (1976) description of self-cleaning and pollen manipulation. The spreading of pheromone over the body as a result of grooming is somewhat unusual in that grooming is usually undertaken to remove materials from the body. The persistent cleaning of the antennae by retinue bees, which removes pheromone, probably serves to keep chemo-receptor sites clear, and grooming of the proboscis may similarly remove materials from an area with chemosensory cells. Examination of workers found almost no 9-ODA on their antennae, suggesting that normally the antennae are rapidly and effectively cleaned after contact with a 9-ODA source. Contact with methyl alcohol lures also lead rapidly to antennal grooming. However, workers that had visited pheromone treated lures were more likely to lick the lures and to clean their mouthparts afterwards. Similarly there was no evidence that leg-abdomen contacts were used specifically to translocate pheromone (Naumann 1991, Naumann et al. 1991). Little if any, pheromone moved passively on the cuticle.

***“The retinue consists of up to 12 workers that contact the queen with their antennae, forelegs, and/or mouthparts.”***

Grooming and non-grooming workers gathered similar total amounts of radio-labeled pheromone and carried similar amounts externally. However, the proportion of the externally-carried total that was found on the mouthparts was significantly greater for the non-grooming workers and that on the abdomen was significantly less (Naumann 1991).

Winston and Slessor (1992) also allowed workers to contact the queen for different periods and then measured the amount of pheromone they picked up. The amount of pheromone transferred during any short interval was proportional to the quantity present at the source during that interval. The transfer of these chemicals from the queen to the workers is an important step in the sequence of events that lies between pheromone production by the queen, and the performance or inhibition of worker activities (Naumann et al. 1992).

The retinue of workers typically associated with the queen removes the greatest fraction of the queen's pheromonal production. Not all bees in the retinue pick up and transfer the same amount of pheromone, however. There are two types of retinue bees: licking and antennating messengers. The lickers touch the queen's with their tongues, forelegs and mouthparts. The antennators brush the tips of their antennae lightly and quickly over her body. Only about 10 percent of the bees are lickers, but they pick up over half the queen's pheromonal secretion. Each antennating worker picks up much less pheromone and passes on much less in subsequent contacts (Winston and Slessor 1992). After workers have made extensive contact with the queen (> 30 seconds), they behave as messengers 'dispersing queen pheromone.' They walk more rapidly, antennate nestmates and receive inspections more frequently, and perform fewer labor acts in the 30 minutes following queen contact than do randomly chosen broodnest workers of the same age (Seeley 1979).

The wax comb also plays a role in the transfer of pheromone, although the queen deposits only one percent of her production there. Workers pick up a little of the pheromone the queen deposits. The remaining pheromone is probably released slowly over the next few hours. The slow release may explain why empty comb that has had brood in it is attractive to adult workers. The queen spends most of her time in the brood area, and her pheromonal footprints would be concentrated there (Winston and Slessor 1992).

The loss of pheromone, however, is primarily through internalization. The



Biggest in the Northwest  
Complete Online Store  
[www.ruhlbeesupply.com](http://www.ruhlbeesupply.com)  
503 657 5399

### *Australia's Honeybee News*

The Journal of the New South  
Wales Apiarists' Association Inc.

Published bi-monthly  
International Subscription  
(Airmail) - AUS\$50  
Visa, MasterCard welcome

For more information contact:

**The Editor, PO Box 352  
Leichhardt NSW 2040 Australia**  
Email: [honeybee@accsoft.com.au](mailto:honeybee@accsoft.com.au)

TABER'S on the web . . .



**RUSSIAN QUEENS & PACKAGES**

Phone 707.449.0440  
P.O. Box 1672

Vacaville, CA 95696

[www.honeybeegenetics.com](http://www.honeybeegenetics.com)

queen herself internalizes some 36 percent of the pheromone she produces. She swallows some of it, some is adsorbed on or bound to her cuticle and some moves through the cuticle into the hemolymph (blood). Messenger bees also internalize pheromone; the licker bees swallow 40 percent of the pheromone they pick up (Winston and Slessor 1992). Most of the rest is quickly transferred from the worker's head to her abdomen by a combination of passive transport and active grooming (Naumann 1991). There the pheromone passes into and through the cuticle. Some of it ends up in the blood within 30 to 60 minutes and some remains bound to or adsorbed on the cuticle. Between the queen and workers, nearly all of the pheromone is eventually internalized (Winston and Slessor 1992).

The most abundant component of QMP, 9-keto-2(E)-decenoic acid is rapidly translocated in substantial amounts to the legs, thorax and abdomen of retinue workers after contacting a pseudo-queen lure, despite the fact that this pheromone is gathered primarily with the mouthparts (Naumann et al. 1991). The backwards movement may be due to grooming, passive diffusion, or both. Transfer of QMP to the feet and abdomen of retinue workers may increase the rate at which pheromone can be passed onto the other workers, directly through contact, or indirectly via the comb wax.

Naumann et al. (1992) studied the intra-nest transmission of the two aromatic components of QMP; HVA and HOB. After being secreted onto the body surface of the queen, the greatest quantities of HVA and HOB are removed by workers in the queen's retinue, especially those contacting the queen with their mouthparts. Other workers acquire pheromone components via direct contact with retinue bees or with other workers that have already acquired queen pheromone. HVA and HOB can also reach workers through queen or worker "footprints," although the relatively little material deposited onto the comb wax becomes less available with time, presumably because of diffusion into the wax. Pheromone material is removed from circulation by being internalized into workers, the queen, and the wax.

The intra-nest transfer of these two components, both qualitatively and quantitatively, is similar to that described earlier for the most abundant queen mandibular gland pheromone component, 9-keto-2-(E)-decenoic acid (Naumann et al. 1991). Thus, the queen mandibular gland pheromone complex is transferred through the nest as a unit rather than as individual components moving at different rates.

Pheromone is also transmitted by workers obtained from queen cells. Immediately after visiting cells containing immature queens, workers were observed to engage in prolonged cleaning, particularly of their tongues when they had visited larvae, and of their antennae when they had visited pupae. Thereafter, other workers usually initiated and made antennal contacts with them. During such antennal contact the bee that had visited the queen larva often donated food (Free and Ferguson 1982). Workers were stimulated to

make antennal contact with the excised heads of bees from a queen's court, providing further evidence that queen pheromone is transferred between worker's antennae. **BC**

#### References

- Butler, C.G. 1954. *The method and importance of the recognition of a colony of honeybees (A. mellifera) of the presence of its queen.* Trans. Roy. Entomol. Soc. Lond. 105: 11-29.
- Free, J.B. and A.W. Ferguson 1982. *Transfer of pheromone from immature queen honeybees, Apis mellifera.* Physiol. Entomol. 7: 401-406.
- Jander, R. 1976. *Grooming and pollen manipulation in bees (Apoidea): the nature and evolution of movements involving the foreleg.* Physiol. Entomol. 1: 179-194.
- Kaminski, L.-A., K.N. Slessor, M.L. Winston, N.W. Hay and J.H. Borden 1990. *Honey bee response to queen mandibular pheromone in a laboratory bioassay.* J. Chem. Ecol. 16: 841-849.
- Naumann, K. 1991. *Grooming behaviors and the translocation of queen mandibular gland pheromone on worker honey bees.* Apidologie 22: 523-531.
- Naumann, K., M.L. Winston, K.N. Slessor, G.D. Prestwich and B. Latli 1992. *Intra-nest transmission of aromatic honey bee queen mandibular gland pheromone components: movement as a unit.* Can. Ent. 124: 917-934.
- Naumann, K., M.L. Winston, K.N. Slessor, G.D. Prestwich and F.X. Webster 1991. *The production and transmission of honey bee (Apis mellifera L.) queen mandibular gland pheromone.* Behav. Ecol. Sociobiol. 29: 321-332.
- Seeley, T.D. 1979. *Queen substance dispersal by messenger workers in honeybee colonies.* Behav. Ecol. Sociobiol. 5: 391-415.
- Slessor, K.N., L.-A. Kaminski, G.G.S. King and M.L. Winston 1990. *Semiochemicals of the honeybee queen mandibular glands.* J. Chem. Ecol. 16: 851-860.
- Slessor, K.N., L.-A. Kaminski, G.G.S. King, J.H. Borden and M.L. Winston 1988. *Semiochemical basis of the retinue response to queen honey bees.* Nature 332: 354-356.
- Winston, M.L. and K.N. Slessor 1992. *The essence of royalty: honey bee queen pheromone.* Am. Sci. 80: 374-385.

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



**Honey Bee Farm**  
**Mellifera Millinery**  
 Custom Couture Beekeeping and Gardening  
 Hats and Veils  
[www.HoneyBeeFarm.org](http://www.HoneyBeeFarm.org)  
 (203) 938-5645  
*Helping The Honey Bees*

**Planning A Bee School  
 Next Spring?**

Contact Dana Stahlman for bulk discounts on *Beekeeping 101 Handbook & Guide for Beginning Beekeepers*

When buying for your bee school, you will receive the bulk rate discount as well as a series of Powerpoint presentations covering the chapters in the book with your order. You will also receive one copy of *Beekeeping 101, 201 301* for your club library.

Visit [www.gobeekeeping.com](http://www.gobeekeeping.com) and email me at [stahlmanapiaries@aol.com](mailto:stahlmanapiaries@aol.com) for pricing.

# The Ugly Side Wax Moth IPM

Mike Hood



*Use chemicals as a last resort when it comes to controlling this pest.*

## PART II:

This month we continue our study of the application of integrated pest management and wax moths. Last time we discussed many effective and economical IPM options that are available to control this beekeeping pest, but there are two additional options that we will discuss this time – biological control, an important option beekeepers should consider, and will cover chemical control as a final option. We do, however, strongly suggest that beekeepers consider using other IPM options prior to using chemicals.

**Biological Control.** B401, a microorganism, is a product manufactured by Vita-Europe Ltd. for the biological control of wax moths, but it is not currently registered for use in the U.S. The product is a bacterium, *Bacillus thuringiensis* subspecies *aizawai* that is manufactured specifically for wax moth control in stored comb. The material is formulated to kill young wax moth larvae as they attempt to feed on comb and must be used as a preventive before combs are infested. B401 leaves no residue on comb and it is harmless to bees and humans. Some other strains of *Bacillus thuringiensis* are toxic to bees and humans, so resist the temptation of using other BT products. B401 was marketed in the U.S. several years ago by the trade name Certan®. The product directions called for a mixture of one part Certan® to 19 parts water to be sprayed on both sides of every frame for effective wax moth control. Once mixed the solution must be used the same day. One application of the product gives wax moth protection in stored comb until the next season. B401 is currently available in Canada and some European countries. There have been some indications that this product may be re-registered in the U.S., but currently it is illegal to purchase or use this material in this country.

Research investigations have been conducted to find other effective forms of biological control for wax moths. Red imported fire ants (*Solenopsis invicta*) which are found throughout the southern U.S. feed on other insects and can play an important role in wax moth IPM. Fire ants establish a network of underground tunnels that radiate from the mound and have been reported to cover a foraging range of several meters. The red imported fire ant now infests over 275 million acres of land, primarily

in nine southeastern states in the U.S. and Puerto Rico, with small infestations in Oklahoma and Tennessee. The overlapping generations of wax moths and fire ants offer the potential for beekeepers to take advantage of this natural predator-prey relationship.

Some beekeepers in the southern U.S. store their supers of drawn comb on wooden pallets stacked cross-frame to allow light and ventilation along with fire ants to also contribute to wax moth control. The fire ant intervention form of wax moth control was brought to my attention some years ago when the only available product, PCB (Paradichlorobenzene), was temporarily unavailable for purchase in the US. Two innovative beekeepers, Bert Kelley (Lakeland, Florida) and L.C. Reynolds (Saluda, South Carolina), shared with me their ideas and experiences with this form of wax moth biocontrol. Their reports of wax moth control intrigued me enough to conduct research investigations to either prove or disprove this theory of possible wax moth biocontrol (see photo).

Dr. Mac Horton, a fire ant extension specialist at Clemson University, and myself confirmed that fire ants along with light and ventilation offer the beekeeper an excellent IPM option (Hood et al. 2003). In our research that

*B401 or Certan® as formerly known. (photo courtesy of Vita Gallery, Vita-Europe Ltd.)*





Several fire ants stinging a wax moth larva.

was conducted at Clemson University, South Carolina, we found that a high degree of wax moth control (practically 100%) in stored equipment can only be achieved in areas of extreme fire ant activity that would make the average beekeeper uncomfortable. However, storing comb on a site or outyard where a few fire ant mounds are present should offer the beekeeper an acceptable level of wax moth control.

**A warning is advised here: beekeepers, who are allergic to fire ant venom, are not advised to practice this form of wax moth biocontrol, because there is always a chance of being stung by the ants. However, if a few guidelines are followed carefully, the chance of being stung is minimal.**

Following honey extraction, beekeepers should store wet combs away from the apiary for a few hours to allow bees to clean up the residual honey. If wet combs are stored in the presence of fire ants, the fire ants will feed on the honey and may damage the comb. Check out my super storing arrangement in the photos. You will notice that the supers can be stacked vertically and cross-framed on a wooden pallet five supers high with a piece of plywood on top to prevent rain from reaching the stored comb or sunlight from melting the wax. The equipment can be stacked for wax moth protection in mid-Summer then moved into cold storage in Winter, if preferred, when fire ants are less active.

In our research, we also found that an alternate form



L.C. Reynold's supers of drawn comb stored on pallets in Saluda County, South Carolina. Notice the fire ant mound in foreground.

of super storage on a wooden pallet provided wax moth control. Five supers with frames can be stacked horizontally and secured with a ratchet band to hold supers together. This stacking arrangement allows for additional ventilation and light to enter the combs. In some areas, it may be necessary to place a queen excluder on each end of the stacked supers to avoid damage by mice or birds.

One super stacking option that we found totally unacceptable was stacking supers of comb in a beehive arrangement that provided minimum light and poor ventilation. Total destruction of the comb occurred even at the highest level of fire ant activity. However, some beekeepers report good cleanup of dead-out colonies that are riddled with wax moths when stacked in this manner and placed directly on top of a fire ant mound.

**Chemical control.** The use of chemicals in an integrated pest management program is recommended as a last resort when other options have failed or are not possible. There are two chemicals available in the U.S. to control wax moths, paradichlorobenzene (PDB) and aluminum phosphide (Phostoxin). PDB is registered for



Dr. Mike Hood.

wax moth control for use in protecting stored comb. PDB cannot be used for wax moth control in live bee colonies, nor is it approved for protection of comb honey. PDB is available in crystalline form which vaporizes when temperatures are higher than 70°F (21°C). Honey readily absorbs PCB fumes resulting in honey being unfit for human consumption. Therefore, comb should be free of honey prior to treatment with PCB. Five full-depth supers or 10 half-depth supers can be stacked vertically in beehive fashion making sure to secure any cracks or openings with tape to provide a good seal. The product label calls for three ounces or four tablespoons (85 g) to be placed on a piece of paper or cardboard on frame top bars of the top super with lid to cover the stack. Some beekeeping equipment suppliers sell a hive shim that contains a sliding drawer where crystals can be conveniently placed and inspected. The heavier-than-air crystal vapors move downward through the stacked supers killing wax moth adults, larvae, and pupae. PDB vapors also repel wax moths from entering exposed equipment. However, the vapors will not kill wax moth eggs. Crystals vaporize quickly at warm temperatures and have to be replenished periodically. Beekeepers are strongly advised to air out stored chemically exposed supers for a day or two away from PCB prior to placement on colonies because it is toxic



Research site of wax moth IPM project using vertical stacking arrangement on wooden pallet.



Alternative super storage arrangement using a band to hold five supers of drawn comb on a wooden pallet and plywood on top. Notice queen excluder on end to exclude mice and birds.

to bees at high concentrations. Mothballs, which contain naphthalene are not registered for wax moth control and are illegal for use in protecting beekeeping equipment.

Aluminum phosphide is sold under various trade names and comes in tablet or pellet form and turns to a gas state as a fumigant for control of wax moth in stored drawn comb. The material is highly effective for killing wax moths, but it is flammable and can be extremely hazardous to humans. Therefore, it is classified as a "restricted use chemical" that only licensed pesticide applicators can legally purchase and use.

**NOTE. Beekeepers should resist the temptation of using off-brand or unregistered chemicals for wax moth control. There are great risks involved when a beekeeper breaks the law (federal and state) when using a product or chemical that is not registered for a specific pest. We have found that beeswax readily absorbs chemicals and may harbor toxic materials for long periods of time. Using illegal chemicals for wax moth control may lead to contaminated hive products and can result in injury to the consumer as well as the beekeeper. Our beekeeping industry can ill afford the public outcry over the news of contaminated honey.**

**Summary.** Wax moths are found almost anywhere honey bees are kept, but they can be a major problem for beekeepers in warmer climates, particularly in the tropics and the subtropics. I agree with Gillard (2009) who noted that "wax moths keep us from becoming lazy. Conversely, they make us pay dearly for our procrastination, they wake us up from lethargy and reinforce our resolve how we have to be better beekeepers and more efficient managers of our resources."

Keeping strong and healthy colonies reduces the chance of wax moth problems in live bee colonies. The use of wax moth traps in the apiary may reduce the number of adult female moths that are available to enter bee colonies.

Wax moths are best known for their total destruction of stored beeswax comb which according to the late George Imirie is "the beekeepers most precious asset." I have seen various sources that make the statement that bees have to consume eight pounds of honey to produce

a pound of beeswax. Therefore, comb protection should be a major goal for all beekeepers and further, that goal should be met without the use of chemicals.

In most cases, the integrated management of wax moths will serve you well because we have so many options available to control this beekeeping pest. Maybe it is time for you to try a new option that we have discussed in these two articles.

As a senior aged beekeeper friend of mine once shared with me, "when wax moths take over, maybe it is time to go fishing because wax moth larvae make great bait." Good luck with your fishing this year, but I hope that you have to use bait other than wax moths.

For a quick review, here are 10 recommendations on how to control wax moths:

- maintain healthy, strong colonies to promote high bee-to-comb ratio
- clean *Varroa* mite detector boards and beetle traps on a regular basis
- trap adult wax moths in the apiary as well as in the honey house
- do not leave supers of drawn comb in unoccupied beehives
- extract honey from supers within two days of hive removal
- freeze lightly damaged wax moth infested equipment
- burn badly damaged wax moth infested equipment
- replace old comb especially brood comb with new foundation
- maintain good sanitary conditions inside and outside the honey house
- use chemicals as a last resort **BC**

#### References:

- Gillard, G. 2009. *My Friend, the Wax Moth*. Amer. Bee J. Vol. 149 no. 6, pp 559-562.
- Hood, W.M., P.M. Horton, and J.W. McCreddie. 2003. *Field Evaluation of the Red Imported Fire Ant (Hymenoptera: Formicidae) for the Control of Wax Moths (Lepidoptera: Pyralidae) in Stored Honey Bee Comb*. J. of Agricultural and Urban Entomology, Vol. 20, No. 2, pp. 93-103.

# Things Fall Apart: The Centre Cannot Hold . . .

## The Periphery And The Centre – We Need Both

Jeremy Barnes

*“Nothing enables the human soul more, elevates it more, electrifies it more, than to be surrounded by and associated with nature’s beauties.”*

*Dr. Henry Nehrling, founder of the Gardens in Naples, FL.*

Part of the silver lining illuminating the clouds of Colony Collapse Disorder has been the attention given by the media to the plight of honey bees together with the potential consequences for our quality of life. As such the increasing dichotomy between consumer and provider, between town and county, or what Wendell Berry has called the center and the periphery, has been brought into sharper focus.<sup>2</sup>

It was not that long ago that the periphery outnumbered the center. The population was 80% rural and agricultural and apparently every one room schoolhouse in Pennsylvania had a compulsory section in the curriculum on beekeeping because every house had a hive to provide not only honey as a sweetener but also beeswax for candles. The more critical role of pollination was probably neither properly understood nor appreciated.

The concept of center and periphery can range from local (eg. a hive has a periphery on which it depends for nectar, pollen, water and propolis and we are realizing rather painfully the consequences for the bees when that periphery is a monoculture or is infested with a synergy of herbicides, fungicides and pesticides,) to global (eg. the global economy which is the periphery of an industrial and communications center with its connotations of power and wealth.)

Increasingly there has been a detachment between the center and the periphery, what Richard Louv has labeled a *nature deficit disorder*<sup>3</sup> in which people in the center assume and take for granted that their rural neighbors know how to make the land continuously reproduce, that it will always be taken care of and that it will always

provide the cotton for their clothes, the timber for their houses the food for their tables and fuel for their cars. Certainly we still live from and off the land but the assumption that the periphery can unremittingly provide an abundance of fiber, food and refuge is a pipe dream.

As was stressed at Apimondia 2009 in Montpellier, France, in the midst of a financial crisis we are also in an agricultural crisis, and the latter will outlast the former.<sup>4</sup>

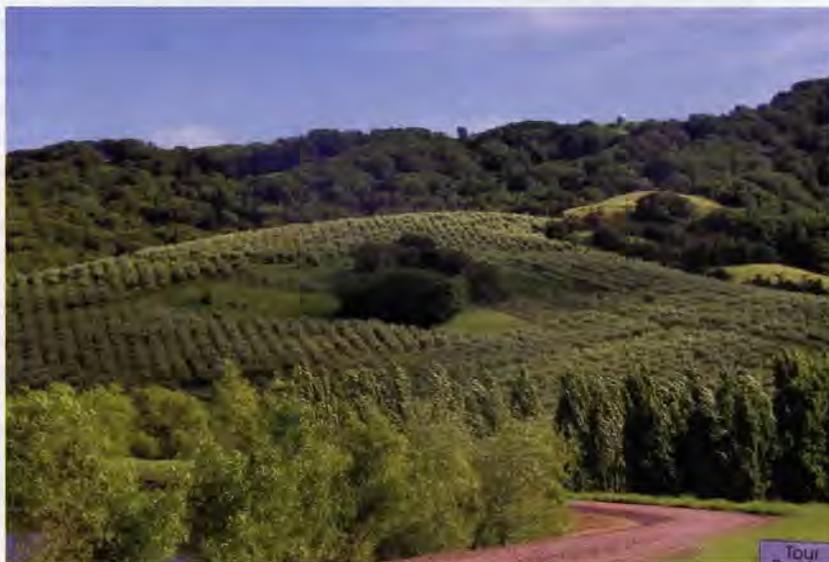
Thus we have children who can identify over one thousand commercial logos but cannot name 10 plants in their backyards, or eight year olds who speak like cartoon characters and are frightened by a beetle or a bee. We cannot expect children who cannot recognize a wren to

be concerned about preserving a spotted owl, nor should we be surprised that, according to Louv, the rate at which antidepressants are prescribed to children has doubled in the last five years.

Not only is the center overpopulated and disconnected from the natural world but increasingly the peripheral areas are populated by urban folk who are not grounded in nature and do not know how to care properly for it. Nor

does that populace have to be on the ground. In June of 2009 Zynga introduced *FarmVille*, described as ‘a real-time farm simulation which allows members of Facebook to manage a virtual farm by planting, growing and harvesting virtual crops.’<sup>5</sup> It had attracted 75.2 million users by February of 2010 who measure their success by market values using ‘farm coins.’ Apparently the prime purpose of the periphery is to make money; no intimate knowledge of the realities of soil, weather, water, climate, crop choice, fertilization and pesticides is required.

By contrast, one of the joys of beekeeping and part of the explanation for the increase in backyard beekeepers is the need to get meaningfully reconnected with nature together with the desire to make a positive impact on a



*The periphery is wild but makes food . . .*

degraded environment. The sense of achievement comes from doing something practical, something hands-on, that has a visible beginning and a measurable end result, whether it be honey, the growth of a colony or the increased fertilization of plants in the neighborhood. The Harvard University scientist, Edward O. Wilson, labeled it *biphilia*, or 'the urge to affiliate with other forms of life.'<sup>6</sup>

"Those who contemplate the beauty of the earth," wrote Rachel Carson, "find reserves of strength that will endure as long as life lasts."<sup>7</sup> Such contemplation is becoming more detached, more academic or, in the case of FarmVille, more cyber, and the results are perilous. Those few guardians of the periphery, those with an intimate knowledge of the land, are increasingly regarded in pejorative terms and we remain silent as their economic independence is threatened by 'development.' This combination of ignorance and contempt in the center promotes disdain for the periphery. The heritage of knowledge is lost in the belief that it can be replaced by 'science' and yet beekeepers realize that science without local lore is dangerous. We know that the use of chemicals on the land and in the hive, for example, causes distress in the colony and breeds diseases resistant to these poisons which invite additional strains of even more virulent chemicals.

DDT is an interesting example. First synthesized in 1874, DDT's insecticidal properties were not discovered until 1939 and it was used with great success in the second half of World War II to control malaria and typhus among civilians and troops.\*After the war, DDT was made available for use as an agricultural insecticide and soon its production and use skyrocketed.

In 1962, Rachel Carson's *Silent Spring* catalogued the environmental impacts of the indiscriminate spraying of DDT and questioned the logic of releasing large amounts of chemicals into the environment without fully understanding their effects on ecology or human health.<sup>8</sup> She suggested that DDT may cause cancer and that it was a threat to wildlife, particularly birds. The publication of *Silent Spring* was one of the signature events in the birth of the environmental movement and resulted in a public outcry that eventually led to DDT being banned in the U.S. in 1972.

• *The Swiss chemist Paul Hermann Müller was awarded the Nobel Prize in Physiology or Medicine in 1948*

*for his discovery of the high efficiency of DDT as a contact poison against specific insects.*

And yet, on a scale in which DDT has a toxicity of 1, Fipronil (sold commercially as Regent) has a toxicity of 6560. Clothianidin (Poncho) reads at 6750, and imidacloprid (Gaucho) is 7297 times more toxic than DDT.<sup>9</sup>

Pesticides may be temporarily effective but they are increasingly less safe. What was once seen as an irresistible solution is now poisoning our environment. Beekeepers witness this every day and yet the response from the center is denial. As one frustrated French beekeeper said from the floor at Apimondia, "If ice bergs were made by Bayer, there would be scientists who would say that there is no ice below the surface, and that the Titanic was not sunk by an ice berg."<sup>10</sup>

Or as Francesco Panella said at the same meeting: "8000 years ago agriculture was the key in the move from barbarism to civilization. That which made us civilized is now under threat. The agrochemical industry is in control."<sup>11</sup>

And somehow, because the experience of the periphery is demeaned by the center, the observations of beekeepers have minimal validity until they have been scrutinized and confirmed by someone in a laboratory miles from the beeyard. In the interim the toxic environment continues and the respect for local intelligence diminishes.

I do not want to fall into the trap of demonizing the center and romanticizing the periphery, of suggesting that somehow rural is righteous. Rather the argument is for sensible urbanism. Nor do I want to diminish the importance and value of science, the achievements of which speak for themselves. I do question the

lack of balance when science is seen as the over-powering, inevitable solution. It's the lack of balance combined with the tendency to see the periphery in terms of dollars rather than the health of the soil, the quality of the water and the longevity of the vegetation that creates toxic agriculture, unsafe water sources and long-distance food sources. Wendell Berry cites Roger Payne in his book, *Among Whales* : "Any observant local knows more than any visiting scientist. Always. No exceptions."<sup>12</sup>

In this sense in particular honey bees, together with frogs, bats, fish and butterflies, are the modern canaries in the coal mine, and it is why the 2009 Apimondia was



... but the center has knowledge and power.

titled "The Honey Bee as Sentinel of the Environment," or as one of the presenters re-phrased it, "The Honey Bee as Bio-Indicator."

The center and the periphery are interdependent. Each needs the other, and to be fully functional each must know the other which in turn requires an on-going, mutually respectful conversation between them. The center, which is the home of corporations, local government and universities, has access to a wealth of information and universal experiences which, by their very nature, tend to be generic. The periphery, by contrast, has what Wendell Berry calls 'placed knowledge' in which no two farms, no two fields, not two hives, are alike.

A surprising example (to me at least) is the Walmart campaign called "Know Your Farmer, Know Your Food." This Heritage Agriculture program encourages farmers within a day's drive of a Walmart warehouse to grow crops that otherwise travel several days from distant states, and in addition the company is encouraging the revival of crops that once flourished in that particular locality. The cost for local produce is slightly higher but Walmart saves on transport and can order smaller (and therefore fresher) quantities at a time.<sup>13</sup>

Thus the local beekeeper needs to combine the reading of beekeeping journals which of necessity are uniform and either overly simplified or highly specialized with local expertise which is specific and practical. We need to know about the traits of different races of bees and also recognize the value of locally raised queens with a proven record of adaptation to local conditions. We need to know what is happening in the almond groves of California whilst acknowledging that our own bees survive best with a well situated hive, a healthy colony and a vigorous queen.

It's a two way, interactive, balanced and respectful conversation. Certainly one could keep bees after doing no more than reading a book, but how much better both to read and to have constant hands-on experience under the guidance of an experienced mentor. Conversely, one can keep bees without any reference to the vast amount of literature distributed by the center, but to do so is to deprive the bees access to the accumulated wisdom of

an inter-connected world.

Each hive stands at the center of its own periphery and the bees, skilled as they are, can only collect what they need from what is there. If my calculations are correct, bees that fly two miles from the hive will forage an area in excess of 8200 acres. We are largely in control of those bounds and despite the wealth of contemporary knowledge we have not done a very good job of stewardship. The global information at our disposal needs to be infused with local expertise. The future of our honey bees may depend on it. **BC**

#### References.

1. Yeats, William Butler. *The Second Coming*. First published in The Dial, 1919.
2. Berry, Wendell. *Local Knowledge in the Age of Information*, an essay published in *The Way of Ignorance*, Shoemaker and Hoard, 2005.
3. Louv, Richard. *Last Child in the Woods; Saving our Children from Nature Deficit Disorder*. Algonquin Books of Chapel Hill, 2005
4. Panella, Francesco. Apimondia, 2009, Personal notes
5. Wikipedia : *Farmville*
6. Wilson, Edward O. *Biophilia*, Harvard University Press, 1986.
7. Carson, Rachel. *The Sense of Wonder*, New York : Harper and Row, 1956.
8. Carson, Rachel. *Silent Spring*. HMCO, 1962
9. Vaissiere, Bernard. Apimondia, 2009. Personal notes.
10. Apimondia, 2009. Personal notes.
11. Panella, Francesco. Op. cit.
12. Payne, Richard. *Among Whales*. Quoted by Wendell Berry, op. cit.
13. Kummer, Corby. *The Great Grocery Smackdown*, The Atlantic, March 2010.

*My thanks to my wife, Mary, for bringing Wendell Berry's essay to my attention and for her comments and insights as this article developed.*

*Jeremy Barnes lives near the center, but is comfortable everywhere in York, Pennsylvania.*

# BuzzyBee™

## THE IDEAL HONEY CONTAINER

### 1 lb. (16 oz.) Honey Bee Container

**Bulk Pack 200 per case**

1-5 cases . . . \$112.00 . . . with caps . . . \$132.00

\*plus shipping & handling (Call us for quote)

Call for larger/smaller quantity prices

In house label printing is now available upon request.

We offer the Flip-Top Caps in Golden Yellow,  
Bright Yellow, Red, Black and White



The Honey Bee  
Container, Inc.  
P.O. Box 403  
Roebuck, SC 29376  
(864) 476-6229

**October Special**

Check out our website at  
[www.thehoneybeecontainer.com](http://www.thehoneybeecontainer.com)  
E-mail - [info@thehoneybeecontainer.com](mailto:info@thehoneybeecontainer.com)



### BuzzyBee™ comes to life!!

Four sided "Decorated" two-color  
16 oz. Honey Bee Containers

1-5 cases . . . \$212.00 . . . with caps . . . \$232.00

**CALL TODAY!**

# Queen Management Using Packages, Or Nucs

*The individual female chosen and fed to become queen stays in that role only as long as the bees agree to this assignment.*

Larry Connor

The practical aspect of keeping viable and productive queens actively contributing to our colonies' well being is quite often challenging. We understand, or should, the role of the queen in the hive – that of egg-producer, pheromone-producer and biological center. It is often quite difficult to accept that even in well managed bee colonies there are less-than-perfect experiences with queens that are both quite consistent with the rule of nature, and regrettably the result of failed management decisions by the colony manager, the beekeeper.

We must keep in mind that the queen serves the bees, not the reverse. The individual female chosen and fed to become queen stays in that role only as long as the bees agree to this assignment. Since recycling of old queen into a worker is biologically impossible, the queen dies. It is the reflection of a social structure. It is a female society, as the males serve as sperm donors, not as policy advisors or production units.

There are two routine mechanisms for queen replacement in colonies, supersedure and swarming. When a queen is unable to perform at the expected level of biological expectations some of her newly hatched larvae are selected for queen cell production. This appears to be linked to a significant reduction in both the queen's egg-laying rate and her pheromone production. The simple

act of producing fewer eggs results in a smaller brood nest, and the brood produces pheromones too. These reduced chemical signals to the worker bees all combine to script the plan to replace the queen, regardless of her age or pedigree. In swarming behavior the queen has done her job extremely well, and coupled with seasonal food abundance the colony prepares to reproduce itself. The queen is put on a diet, prepared for flight, and flies with the swarm to a new home, leaving daughter queen cells behind to issue additional swarms and to emerge, mate and re-center the colony.

In both supersedure and swarming the queen is part of the colony. The workers are her daughters if she has been able to produce brood and the bee population from the previous queen has died of natural causes. The bees know this queen, as they are chemically bonded to her via her pheromones. The queen knows the workers as they feed her and care for her and in doing so provide chemical signals that the workers have modified that complete the biological/chemical circuit of queen to workers, workers to queen.

## Package bees

Beekeepers consider package bees artificial swarms, as they do approximate a swarm with several pounds of bees and a young queen, typical of a natural secondary swarm. But there is no chemical bond between the queen and the workers and the workers and the queen. Package bee producers emerge and mate queens in mating nuclei, remove the queens once eggs are found, and place them into a two or three pound mass of bees shaken from an unrelated brood nest (and thus likely to be primarily nurse and house bees and not foragers). These bees are then loaded into vehicles and driven hundreds and thousands of miles, or placed on cargo planes and flown half-way around the world, to be installed into waiting empty beekeeping equipment.

Of 15 package bees I purchased, all were installed into new equipment (plastic foundation, wooden boxes), given a frame of mostly sealed brood from existing colonies, and fed sugar syrup and protein. The queen was not released because she had been in the package and in transit for only 48 hours, and I have learned that these queens and bees have not established that chemical bond in that short a time period. So the queens were left in the cages with caps in place for three to five days to prevent emergence. During this time the bees can get settled, take down food, start comb building and forage. The delay of the queen's



*Double nuclei with caged virgin queens. The colonies were made in late August with two frames of sealed brood, two frames of honey and a newly emerged virgin queen. The queen cage is capped so she cannot emerge until the beekeeper returns and removes the cap. Then the virgin can emerge when the colony is closed, and mate naturally. These colonies are divided with a thin piece of masonite. The entrances face opposite directions. After the Fall is completed these colonies will be carefully checked for food reserves and fed if necessary.*

appearance is developmentally trivial but incredibly essential. Of the 15 colonies, 14 queens were accepted using a delayed release. We returned three to five days later and removed the cap from the cage so the bees could remove the candy from the tube in the cage. Thus free, the queen, which has already been mated, can start to oviposit (lay eggs). The one queen that was not accepted was where I made a beekeeper error. The frame of brood added to the package held the queen from the donor colony, marked with the color of the previous year. The queen that came with the package was dead in her cage.

The packages of bees were well treated in shipment and were healthy. The bees were not stressed, and only a few dozen dead bees were on the bottoms of the cages. The queens were large and well reared. They were not, however, mated in an apiary with abundant drones or with good mating flight weather. Five of the queens started to lay worker eggs, but within a month had used all the sperm stored in their bodies and were laying a large percentage of unfertilized eggs, and thus we found drone brood in the colonies in worker cells. We pinched these queens and replaced them with queens of our own production.

Two of the colonies developed active European foulbrood, and these queens were also replaced. EFB in a colony reflects a lack of hygienic behavior passed on from the queen to the workers. Once the queens were removed and new queens installed, all signs of the disease were gone from the hive. (EFB is not a spore forming disease like American foulbrood).

Two more colonies failed to thrive, or expand beyond five frames of deep brood and bees. They were broken into even smaller units and given new queens. All of these queens quickly exceeded the brood area of the package bee queens. There is no clear reason why these queens and colonies failed to grow properly.

So by late August only one third, a total of five, of the original package queens remained in the apiary. Two of these queens and their colonies have made 60 pounds of surplus honey. All of these colonies have served as a source of frames of brood for Summer increase colonies, so we did not expect high honey production from them.

These remaining five queens must survive the Winter to complete this story. How many of the original 15 queens will live to be one year old? The answer is five or less.

My assessment of this scenario is this: The queens were mass-produced in a quality queen rearing operation where the operators were grafting from stock that was not tested for hygienic behavior. Also, the drone population was low and/or the mating weather was limited, a frequent event in the Spring. If blame is to be placed, it is on the selection process used to identify breeder queens and on the drone production and mating conditions of the operation. Unfortunately these are difficult conditions to 'fix' and reflect the key weakness of package bees delivered in April.

From the management prospective, the two procedures – of confining the queen for three to five days before release, and the addition of a frame of sealed brood – these efforts increased the success rate of queen introduction/acceptance and seem to have eliminated the early supercedure often found in package bees. The brood frame gave the new colonies a focal point for growth and new bees to fill the gap in age distribution as the bees from



Ripe queen cells, ready to put in nucs.

the original package (swarm) aged (became field bees) and the first of the new queen's worker bees emerged.

If we look at the number of successful colonies that made it through the first Spring and Summer, we only had 33% success (loosing two out of each three queens), putting the cost of each successful colony at the equivalent of three times the cost of each package or over \$220 per successful colony. This is not an entirely fair analysis, since we saved the bees where the queen laid drone eggs, removed the queens with European foulbrood, and made Summer splits from the remaining two duds. We need to add the cost of replacement queens and place some value on our time. That is a reflection of both experience and frequency of hive inspections. *With new beekeepers, these potentially terminal conditions are not usually recognized until it is too late to intervene with a saving management solution and the colonies are lost. Since so many new beekeepers have problems with package bees the beekeeping industry should stop recommending pack-*



Mating nucs . . . are there enough drones?



*Nucs – perhaps a better choice for beginning beekeepers.*

*ages for inexperienced beekeepers who are setting up their first hives without the benefit of proper mentoring from experienced beekeepers.*

### **Nucleus hives**

Numerically, the use of nucleus hives is the most common method of making new hives by commercial and sideline beekeepers, especially those that have migratory operations. Colonies from northern environments and from almond pollination are frequently split into two or more hives, filling pre-prepared hives furnished with drawn comb and foundation, and often a frame of honey. When two or three frames of brood are added, the colony is often moved to a new location, and there a ready-to-emerge (ripe) queen cell is added to the colony. The units are then checked for the queen's successful mating and for stores. They may be fed in a number of methods, from stored comb, frame feeders, jars on top of the nuclei, and sometimes open feeding. Once the colonies are stabilized and the queen has produced at least one cycle of brood, the beekeeper moves the nucleus to a northern location, or offers the nuclei for sale.

The queen cells used in the nuclei may be produced by the beekeeper or may be purchased in the area for introduction. When the cells are duds or the queen fails to mate or return to the colony, these units are often set on successful colonies or the bees spread among other colonies. Like the package bee producers, these colonies share the risk of a shortage of drone numbers as well as the vagaries of the late Winter and Spring in Sunbelt areas. In southern locations, splits of various sorts are used to make up new colonies, using the same new queen or queen cell for the genetic source.

Beekeepers rarely let these colonies raise their own queen, at least intentionally. Unless visits to the apiary are precisely timed, it is possible for the queen cell to be rejected and the bees raise their own queen from larvae moved to the nucleus when it was established. I call these side-comb virgins, and they range from excellent to very poor, depending on the strength of the nucleus, the age of the larvae, and the conditions of the area during cell production and mating. There is a delay in the life cycle of the side comb virgins (from first instar larvae in the 4<sup>th</sup> day of development) and the mature queen cells (in the 14<sup>th</sup> to 16<sup>th</sup> day of development). With a 10-day difference in the development, the colonies that produce their own queens are characteristically smaller and delayed in their

buildup. When nuclei are built up and ready to move geographically or move into standard equipment, each additional frame of sealed worker brood may represent one more medium super of honey from the nectar flow.

Outside of Sunbelt states and in Canada many beekeepers use nuclei for increase in all months of the production season. Traditional April and May nuclei are used for colony increase and for sale to other beekeepers. As described in *Increase Essentials* many more beekeepers are using Summer nuclei for long-term increase, wintering the colonies and having them available the following season without the hassle of making Spring nuclei or purchasing package bees. When the queen stock is locally adaptive and mite and disease tolerant, these colonies are in high demand and are earning a premium price.

Compared to package bees, nuclei have both strengths and weaknesses. The advantages include the existence of a balanced unit of bees, with brood and bees of all ages. The queen has been evaluated one or more times and has the chemical balance with the worker bees. Supersedure is not uncommon, and may reflect poor queen rearing conditions. Mating completeness is a reflection of the available drone population and the weather conditions during mating.

Making nuclei has been shown to break the varroa mite cycle, but it does not eliminate the possibility of other diseases. Source colonies must be free from diseases, especially American foulbrood. Because the units are smaller in size, nuclei often have chalkbrood and sacbrood when strong colonies are less affected.

When buying nuclei, seek colonies with locally adapted queens, newer combs (less than three years old) and ample food reserves. Queens should have a full brood cycle from their own work, showing the buyer both brood pattern and other bee characteristics. Do not purchase nuclei with damaged frames, distorted frames, or more than one frame of foundation.

When nuclei are mite and disease free and have good build-up conditions, they can rapidly expand into full sized equipment in four to six weeks, and go on and produce a full honey crop from clover and other Summer and Fall plants. Unless they were over wintered, they do not usually produce surplus honey from Spring flowers, but use those food resources for buildup.

New beekeepers are strongly advised to use nuclei hives, but only those from reputable sources. The colonies are smaller to examine and have a good balance of food and populations and are less likely to fail. If a queen does fail, or is killed, there is brood present to produce a side comb virgin that may keep the colony alive. Many new beekeepers never know this has happened.

Finally, I recommend that all beekeepers, from the first season on, set up and manage one nucleus hive for every two or three colonies, during their first season. My reason for this is simple – it gives them the insurance of a backup queen during the season, and a second option for Winter survival when large colonies die. Learning how to manage a nucleus and the queen inside is an excellent learning experience. **BC**

*Check the Bee Culture Calendar for Dr. Connor's speaking plans, and check the [www.wicwas.com](http://www.wicwas.com) website for copies of his three books. He hopes to see thousands of beekeepers at the big joint beekeeping conference set for early January in Galveston, Texas. He responds to email sent to [LJConnor@aol.com](mailto:LJConnor@aol.com).*

# Getting Into Beekeeping

## Staying In Beekeeping

*Two things that all beekeepers do – Start Beekeeping – Stop Beekeeping*

James E. Tew

Sooner or later – one way or the other – everyone who has ever decided to begin keeping bees will stop keeping them. There are no exceptions. It's the natural cycle of things.

As beekeepers phase out – for whatever reason – any usable beekeeping equipment is generally sold or given to another up-and-coming beekeeper. Instead of the traditional terms “used” or “second-hand”, the new term is “re-purposed”; therefore, a failing beekeeper's supplies and equipment are “re-purposed” to another keeper and bee life goes on. It's the natural cycle of things.

### Getting into Beekeeping - New beekeepers

Part of my job in the university system is to respond and interact with beekeepers – new and old. Each group brings issues that are sometimes similar and sometimes not. New beekeepers have different issues than that of established beekeepers.

#### A recent phone call from Anna and her husband – new beekeepers

*About three months ago, they bought a beehive split with 15,000 bees and a queen from an established Ohio beekeeper. Now Summer is nearly past and the colony did not seem to be growing. In fact, the new beekeepers could open the hive and rummage around without either smoke or protective gear. (Well, that certainly does not sound good.) They didn't know what a queen looked like nor could they describe anything that looked like capped brood. However, there were some “shiny things” in the bottom of some of the cells. While knowing very little about bees, Anna kept saying that she believed that this colony was not right. (I certainly agreed, but I was not sure how to tell her that this colony's prognosis was not good.) I asked if by some miracle, she could see tiny eggs in the bottom of*

*some of the cells. The phone line was quiet for a few seconds. She abruptly surprised me by saying, “Yes, I see three eggs!” (Three eggs? Do you have a frame in your hand? I wasn't expecting that response.) That was all she saw. In an insightful moment, I asked that if by some chance the three eggs were all in the same cell? They*

*were. (Not good. Probably laying workers. These new beekeepers' colony was hopelessly queenless.) I gave her the news – news that she took surprisingly well. I explained that this colony had essentially no chance of surviving the upcoming Ohio cold season. (This was not an enjoyable phone call.) She was obviously disappointed but stoic. Just when I thought it could not get any worse, she asked, “What are these moths doing in the hive?” Then I had to go through all of that discussion. You know how it goes. All the bright promise of this Spring bee colony was now a busted project.*

By now, many of you must have wondered why I didn't send her back to the original beekeeper. Sadly, the established beekeeper is suffering from worsening dementia. His family said that he was no longer an option for help or beekeeping advice. So here it is . . . people trying to start in beekeeping and people ending their beekeeping projects. I told the new beekeepers that while the colony was not going to survive, they had seen laying workers, wax moths, eggs, larvae, and comb production. True, this colony was a loss, but the experience was not a total loss. The couple was magnanimous about the ailing beekeeper and the colony's demise. They are planning to try again next Spring, but it wasn't because of anything I said.

What did this couple do wrong? What should they have done differently? What could I say that would honestly make them continue to feel good about beekeeping? Maybe they opened the colony too much. Maybe they accidentally killed the queen. Maybe the queen just died.



*Laying worker eggs – a bad sign for a new beekeeper.*





*Nicely managed bee colonies by a caring beekeeper.*

I don't know. They don't know. It's not a satisfying situation. Situations like this one are disturbingly common in the new beekeeper community.

#### **New beekeepers should know . . .**

Any new beekeepers who might be reading my thoughts should know that most old, established beekeepers sometimes forget the way bee things really were. As we recall our memories, they become corrected and smooth. To hear it told, in the past, it seems that all hives were strong. All swarms were low to the ground. All splits quickly grew into giant colonies. The good old days just keep on getting better and better. Alas, pity today's new beekeeper. Not really. If beekeeping was easy and success was always just around the corner, we would all be keepers of bees. Getting starting in beekeeping and growing in beekeeping has always been a positive challenge.

#### **A recent phone call from Phillip – a new beekeeper**

*Phillip was a new beekeeper who had been reading and keenly observing his bees. During the past Spring season, he had installed a single three-pound package and had been watching the colony's progress. His phone call was panicky and put me on edge. All had been going well but now his queen was gone. (That's interesting. How in the world did he know that?) Though he had not seen her since releasing her from her cage several weeks earlier, there were no eggs or young larvae – only capped brood. She clearly had been there. If he didn't immediately order a queen, the package would decline and ultimately not survive the Winter. (The surviving the Winter part was correct, but I was skittish about going directly to ordering-a-replacement-queen step.) I inquired if he had seen queen cells in recent days. Though he didn't know what queen cells looked like, he did not remember seeing peanut-shaped cells in his hive. He reiterated that he was fearful that this queen was gone. He was hot to get a replacement queen on the way. Money was not an issue. Phillip only had the one colony so he could not put a frame of uncapped brood into the questionable colony to see if emergency cells would be constructed. I asked him if he could restrain himself for about two weeks and not open the colony during that time. Combined with the week that had already*

*passed, I hoped that this would be enough time for a virgin queen to mate and get started on the business of egg production. It was a plan about which I was nervous and uncertain. What if Phillip was correct? Waiting two weeks on a queen that didn't exist could easily result in laying workers and colony decline. In fact, she was there. Hallelujah! She did successfully mate and the colony seemingly regained the high road to success. I looked real good, but truthfully, it was a risk I took with someone else's colony.*

#### **New beekeepers should know . . .**

Bee things don't always work out right. While I was right in the above instance, just this past Spring I was seriously wrong in a similar situation.

*In my package order, I came across an odd three-pound package. It appeared to have considerably more than three pounds of bees in the package. That was a good thing because some of my other packages appeared to be light. However, when I shook the bees from the package, I found that the screen wire staple had slipped allowing the screen to curl open and release the queen prematurely into the package. It was a strange package. This colony had lots and lots of bees but a very uncertain queen situation. I waited about eight days to give the mystery colony time to settle down and for the lost queen to find her way. I was truly disappointed to find that the queen was not there and that my package was hopelessly queenless. I stole a frame from one of the other packages that already had just a small patch of open brood on it. My plan was to allow the queenless package an opportunity to naturally requeen itself and I would then add brood and bees from the other normal packages. I didn't bother the ailing package for three weeks. All the while I would watch the entrance activity. It wasn't great, but it looked okay. I was beekeepingly cocky. I had other bees so I could make this situation okay.*

*When I finally inspected the colony, it was all wrong. It had not requeened itself. It was queenless and had laying workers all over. What a mess. Aborted queen cells were clearly visible. The original big population was now down to a pound or so of old, defeated bees. I combined the mess with another colony. I was wrong. New beekeepers should know that sometimes, things just don't work out right – even when they should.*

#### **Staying in beekeeping – the confident beekeeper**

While I was disgusted with myself, I certainly was not going to quit keeping the bees. I didn't write about all the installed bee packages that went on to become truly nice colonies in just one season. Most things don't go wrong. In this middle phase of beekeeping, it feels as though it will last forever. Buying books, getting new equipment, buying another beekeeper out, making colony increase, serving as an officer in a beekeeping group, being quoted in the newspaper – it seems like it will last forever. For most of us, this phase does go on for a long, long time.

In my opinion only, this middle phase is the position that most of us spend much of our allotted time. If we are going to drop out, we probably do it within the first two to three years. Hang on for three years or so, and we

are probably in it for the long haul. It is in this middle phase that beekeepers have the experience and energy to evolve and change – to become experienced beekeepers. This middle group is eager to learn how to raise queens, produce comb honey, or provide commercial pollination services. I've referred to this group in previous articles. During these years, beekeeping becomes an integral part of their psyche. It seems like it will last forever, but the years pass. Then, more years pass.

### Getting out of beekeeping – the final phase

At some point, we all get out. We all do and just to be clear, this piece is not an autobiographical sketch of my bee life. While I have been keeping bees for a bit less than 40 years, I am still staunchly in the middle phase. But due to my university job, I have watched many, many people as they phased out. Some stopped keeping bees due to radical changes in their health. Some stopped due to advancing age and increasing limited mobility. Some developed sensitivity to bees and their stings. Some just lost interest. We change as we age. As a young man, I was an avid water skier. Not now – not in many years. As a young man, I was a hunter. Not now. Absolutely no interest. But as a 23-year-old, I kept bees and I am still here keeping bees all these years later.

No doubt my Dad will read this, but one reason this final phase of beekeeping is on my mind is because of my 89-year-old father. He recently told me that he is finished with his bee project. He doesn't mind talking and thinking about bees, but he will never again actually manage hives or be involved in beekeeping. He asked what should be done with all his bee stuff. Sell it? Give it away? "Re-purpose" it? How to sell it? What's it worth? Where to advertise? There is no "Blue Book" for estimating used beekeeping equipment value. Ironically, mixed in the stuff that Dad is now relinquishing are the beekeeping remnants of three to four other beekeepers who "re-purposed" their bee stuff to Dad. The cycle continues.

Then there is the plight of the purchaser – the younger eager beekeeper. When is buying this used equipment simply a bargain and when is an older beekeeper being ripped off? Many years ago, I purchased bees and beekeeping equipment from a woman who had been recently widowed. She literally cried the entire time we bartered; if you can call it bartering for I paid her full asking price. She wanted the bees and equipment to go



A yard that does not exist anymore. Closed down due to advanced beekeeper age.

to a good home. It's 35 years later and I still have some of that equipment. It's just bee boxes, but they have special significance to me.

To those eager beekeepers who are still growing and keeping bees, buy this stuff as the opportunity arises. Perpetuate the craft of bee keeping. Develop your own memories. Grow and evolve as a beekeeper. Be a part of the natural cycle of things. Don't quit. **BC**

Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684; [Tew.1@osu.edu](mailto:Tew.1@osu.edu); <http://beelab.osu.edu/>

### INNOVATIVE GIFTS FOR BEEKEEPERS!



Quality night lights with laser engraved images.



Laser engraved polished Granite trivets.

Your choice \$24.95.

See more designs at [www.beezerkbelts.com](http://www.beezerkbelts.com)

MADE IN USA

Ask about custom work.

## BEEKEEPERS PROTECTIVE CLOTHING

40th Year

The PROVEN PROTECTION

Your New Dealer

SACRAMENTO BEEKEEPING

Ph (916) 451 - 2337

ref: S21 vest



ref: S28 smock



ref: S41 jacket



ref: S36 suit



# SHERIFF

est 1968  
SACRAMENTO BEEKEEPING 2110 X Street. SACRAMENTO, CA 95818 USA

USA: Ph (916) 451 - 2337 Fax (916) 451 - 7008

Ph +44 1872 863304 [sherriff.int@btinternet.com](mailto:sherriff.int@btinternet.com)

B.J. Sherriff, Carlew, Mylor, Felmouth, Cornwall, England TR11 5UN.  
[bjsherriff.com](http://bjsherriff.com) [beesuits.com](http://beesuits.com) Quality made in England

# WINTERING

## *Did Langstroth Have It Right?*

Roger Hoopingarner

*Langstroth advocated boring a hole in the center of all the frames in the Fall so that the bees had easy movement between frames. He did this in the Fall as bees would not be inclined to fill the hole with wax at that time.*

In the third edition of his book, *Hive and the Honey Bee*, Langstroth starts off his chapter on wintering bees using his gathered knowledge to describe the biology of how bees live through a northern Winter. He recognized that the honey bee is a tropical species that has adapted its behavior to live in the temperate north. He wrote about putting a thermometer into the center of Winter cluster and finding that the temperature was Summer like. I think that this is a fact that most people do not understand, and probably many beekeepers. The Winter cluster is a sphere of bees that contracts its size (surface area) as it becomes colder outside so as to dissipate less heat. If there is a sufficient number of bees they can maintain brood temperatures in the center of the cluster. Langstroth's use of a thermometer not only proved that fact to himself, it did to his beekeeping friends and those who read his book.

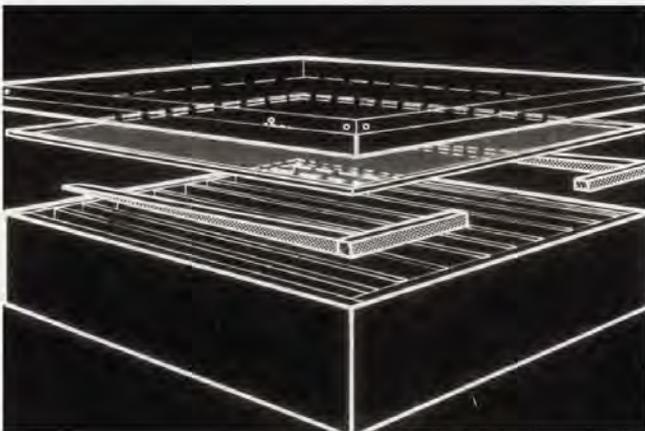
However, it is not clear when he writes about 'cold climates' as to exactly which area of the country he is describing. He wrote the book while living at Oxford, Ohio which is in southwestern Ohio and the bees would normally have flight days during the Winter. To Langstroth this fact was important as he indicated that in cold climates you should not Winter your bees on their Summer stands. He also describes the need for honey for the energy to keep the cluster warm, and that the beekeeper needs to make sure the honey is sufficient and in the right place for the bees to access it during cold periods. He comments that since bees are natives

of warm places they do not instinctively place honey in the proper places. I take exception to that statement as, I think, they do place honey in the right places only we, as beekeepers, remove the honey that is on top of the hive and the bees do not have enough time or nectar to replace it in the fall. Bees left alone will place the honey in the right position for the cluster to use it during the Winter. I have known beekeepers that removed as much honey as they could in the Fall and then fed their colonies 60 pounds of heavy sugar syrup. That way the colony placed the honey in the right location for Winter.

In nature, a hollow tree hive, starts as a swarm and builds its comb to hold honey and for raising brood. The honey is placed at the top of the comb and the brood is slowly pushed downward. If the swarm occurs early enough in the season and the colony stores enough food the colony slowly eats its way upward during the Winter. Heat from the cluster warms the honey above it and the bees work their way to the top of the hive. Providing that enough honey was stored the colony survives winter and begins to fill the comb with honey as the next season enfolds. This process of slowly moving up and being crowded downward is repeated as long as the colony remains healthy and queen-right. Beekeepers often disrupt this pattern of nature by removing too much honey and not feeding syrup to make up the "right" winter stores. Because of our manipulations the honey can also end up in the wrong place and ends up outside of the path of the Winter cluster as it moves upward. I suspect the moving to a compact column was the reason for the generally more successful wintering of the eight-frame hives. Same amount of honey, just placed is a better location for the Winter cluster.

In order for the bees to have access to the honey during the Winter, Langstroth advocated boring a hole in the center of all the frames in the Fall so that the bees had easy movement between frames. He did this in the Fall as bees would not be inclined to fill the hole with wax at that time. Many beekeepers are reluctant to do this to their beeswax frames, but it is a good idea. Having "holey" frames is beneficial to the Winter cluster.

Langstroth did not like strong winter winds. He thought they took too much heat from the hives. His suggestion, for those areas that had cold Winter winds, was to place sheaves of straw around the hive.



He was adamant about ventilation of the hive throughout the year, but particularly in Winter. His suggestion of putting a couple of small sticks under the cover to allow the escape of moist air is a good one. I read this suggestion many years ago and designed a couple of tapered wedges that fit under the inner cover of the hive. (see figure)

The upper entrance and ventilation hole is covered from excess wind by the outer cover coming down in front of the hole. The cover needs to be pushed as far forward as possible to allow the bees to use the upper entrance in case snow covers the lower entrance.

Langstroth recognized that bees were aided if they could fly out during the Winter to eliminate waste. He noted that some of these bees that flew during the Winter were lost, but he also was ahead of his time in recognizing that many of these bees were diseased. We now know this to be nosema disease caused by the parasites *Nosema apis* and *Nosema ceranae*.

In *The Hive and Honey Bee*, Langstroth writes for several paragraphs on wintering bees in cellars. He mentioned dry cellars as being important, though on previous pages he emphasized the importance of water for the bees, especially for rearing brood. During the Winter bees normally will have access to water if nothing more than the condensate water from their metabolism. He mentions this earlier in the chapter when he was writing about ventilation of the hive for removing moist air.

Following his discussion on cellar wintering, Langstroth goes into an interesting discourse. He incorporates an article written in the German bee journal, *Bienenzeitung*, by a Rev. Scholtz of lower Silesia. The article was translated from the German by his friend, Samuel Wagner. In the article the Rev. Scholtz describes a system of wintering where the colonies are moved together and stacked in a pyramid. Around and over the hives is built an elaborate insulating structure with air tubes. The structure was called a "clamp." It would appear that Langstroth was taken by the system described in the article, though there is no evidence that he ever tried the clamp. So why was he so taken by this wintering system? I suspect that Langstroth recognized all the conditions that were necessary for the proper wintering of bee hives, and this system incorporates most of these conditions. In modern times these conditions are the same as we incorporate into the design and making of our wintering houses. That is, a stable cold temperature along with proper air flow.

This last condition is probably the one thing that plagued the early beekeepers that tried to Winter in cellars. If you read the trials of some of these beekeepers they would take a few colonies into their cellars. The results were great as all of the hives would survive. The next year they would take a few more colonies into the cellar and again the results would be good. Then they would decide that "cellaring" was the way to go and take all of their colonies into the cellar. The result was a disaster! The most probable reason was that, when they took all of their colonies into the cellar, the area and

volume of the cellar retained too much carbon dioxide and the colonies all died. In modern wintering houses the owners are careful to remove the CO<sub>2</sub> so that it does not harm the colonies.

To sum up Langstroth's wintering thoughts and ideas it can best be done by a quote from his book. I thought so much of the quote that I made it bold print when I published the *Hive and Honey bee Revisited*. It is a very precise and concise listing of the requirements of wintering.

***"If the colonies are strong in numbers and stores, have upward ventilation, easy communication from comb to comb, and water when needed - and the hive entrances are sheltered from piercing winds, they have all the conditions essential for wintering successfully in the open air."***



Did Langstroth have it right when it came to wintering honey bees? I contend that not only did he have it right, but explained it better than many writers since his time. **BC**

*Roger Hoopingarner is Michigan State University Extension Specialist in apiculture, retired, and the author of The Hive And The Honey Bee, Revisited - An Annotated edition of L.L.'s 3rd edition.*

**"Certified Naturally Grown  
is the natural choice to help  
promote our bee business!"**

—LYNE VENDELY, Sweet Betty Bee's Honey & Hive, Asheville, NC



*the grassroots  
alternative  
to certified organic  
for farmers &  
beekeepers*



Find participating apiaries near you [www.naturallygrown.org](http://www.naturallygrown.org)

# All The BUZZZ in...



## Hello Friends,

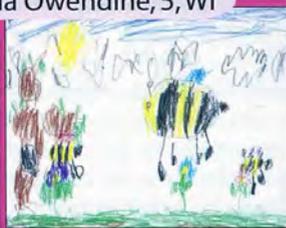
Have a sweet celebration and invite your friends over for a party to honor the honey bee.

Bee B. Queen

Send photos of your party ideas.

Brandon Buckner, 9, WI

Tazia Owendine, 5, WI



Cece Spann, WI



Wil Hansen, 9, TN



## A Bee Hullabaloo and Party Too



### Pin the Antennae on the Bee

Draw a circle on a piece of poster board to represent the bee head. Draw two large compound eyes and three little eyes called ocelli on the top of the head. Cut antennas using black paper. Take turns by putting on a blindfold, spinning around and attaching the antenna to the bee. You may want to have each person write their name on their antenna. Use tacky putty or removable tape.

Quinn, 7, MO



Rosalyn Sommers, 9, IA

### Find the Flowers

Make different sized paper flowers and hide them all over the room. Send out all the "bees" to find them. Whoever brings back the most is the winner.

Variations:

\* Have everyone work together to find them.



\* Make the same number of different kinds or colors of flowers. Each person collects only one type of flower just like the fact that bees only go to one kind of flower on each foraging trip. The ones that get done first help the others to find theirs.

\* Work in teams to find the flowers.



### Pollen Relay Race

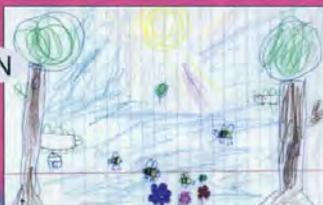
Make pollen bean bags by filling yellow socks with beans. Use a rubber band or string to close. Place the same number of beanbags in two baskets or boxes to represent the flowers. Divide into two teams. One person from each team flies to the flower, takes a beanbag and runs back to their team. They do a figure eight dance being followed by the next person. When done, that person flies to the flower. Repeat until everyone has had a turn. Whichever team has the most pollen by the end of a certain time is the winner.

# ... BEE kid's CORNER

Produced by Kim Lehman - [www.kim.lehman.com](http://www.kim.lehman.com)  
[www.beeculture.com](http://www.beeculture.com)

October 2010

Benjamin Hansen, 6, TN



## Beehive Pokey

(Tune: Hokey Pokey)

You put your antennas in.  
 You put your antennas out.  
 You put your antennas in  
 and you shake them all about.  
 You do the beehive pokey  
 and you turn yourself around.  
 That's what it's all about.

You put your wings in...  
 You put your abdomen...  
 You put your head...  
 You put your compound eyes...  
 You put your stinger in...



From Minnesota Honey Producers Conference.

## Bee Treats

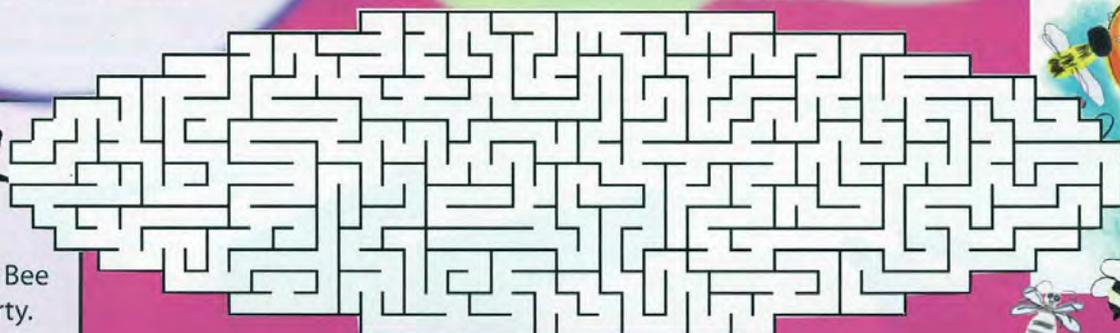
- 1/2 C. honey
- 1/2 C. peanut butter
- 1 C. dry milk
- 1 C. uncooked rolled oats



Combine all the ingredients together to make dough. Using a cookie scoop, make round bee bodies. Have each guest decorate their own bee using raisins, coconut, almonds, licorice, red hots, and dried fruit.



Help Buzzy Bee find the party.



To gather a load of pollen, a honey bee needs to visit around 1500 flowers.

## Make your own Party Favors

Make a pencil topper by wrapping yellow and black chenille strips around a pencil to make the bee body. Glue on eyes and wings. Some things to use for the eyes: google eyes, small pompoms, paper, or beads. Some things to use for the wings: tissue paper, ribbon, fabric, or craft foam.



## Become a Bee Buddy



Send two self addressed stamped envelopes and the following information to: Bee Buddies, PO Box 2743, Austin, TX 78768. We will send you a membership card, a prize and a birthday surprise!

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, state, Zip code \_\_\_\_\_

Age: \_\_\_\_\_ Birthday: \_\_\_\_\_

E-mail (optional) \_\_\_\_\_

Send all questions, photos and artwork to:  
[beebuddies@hotmail.com](mailto:beebuddies@hotmail.com) or mail to the above address.

# TOP BAR VS. LANGSTROTH

## - No Contest -

*Trying to get two or more beekeepers to agree on the solution to any beekeeping problem can be problematic, at best.*

Ross Conrad

### Top Bar Hives - vs - Langstroth Hives . . . No Contest

The top bar hive (TBH) has grown significantly in recent years along with the growing interest in beekeeping. While most top bar beekeepers are part-time backyarders, there are a few small-scale commercial top bar operations (typically consisting of about 100-300 hives) scattered across America.

Many claims are being made, both for and against the TBH. Some top bar beekeepers tout the benefits of the TBH while denigrating the Langstroth hive. To listen to these folks you would think that beekeepers who use Langstroth hives are damaging the bees ability to be healthy and are behind the current CCD epidemic; while TBH beekeepers are the world's answer to the declining health of the honey bee. Then there are beekeepers who use Langstroth hives who deride the TBH as a fad that may increase the likelihood of starvation over Winter and is not worth wasting time on. Can both these extreme views be true?

### Exclusive Benefits of the Top Bar Hive

There are certainly a number of benefits to the top bar hive that are not available with the Langstroth design. A TBH is very simple to build requiring a minimum of materials and tools. This is

part of what makes this hive ideal for use in rural Africa. The most common carpentry tools available there are typically a hand saw and hammer. The Kenyan TBH design requires a minimum of lumber, and in fact can be made from many naturally occurring materials - sticks and the like are common.

The ease of construction and simplicity of design also help make the TBH inexpensive to build compared to the conventional Langstroth design. While one can certainly spend several hundred dollars on a fancy, well-built top bar hive that comes complete with a viewing window and stand, you can build your own basic, no-frills TBH with scrap lumber for under \$20. This is a big savings over conventional Langstroth hive equipment that typically runs between \$100-\$200 depending on the supplier and the number of honey supers

purchased.

The traditional TBH design utilizes top bars that fit snugly up against one another. This greatly reduces the areas of the hive that are exposed during hive inspections. The reduction in disturbance can reduce stress on the hive that may result during an inspection, as well as the stress on the beekeeper. By limiting the disturbance of the hive to the frames that are being inspected, the number of bees that are likely to become defensive is reduced . . . a huge advantage when working with African bees! While this advantage isn't as great in TBHs housed with less aggressive European honey bees, it is still beneficial and can allow some top bar beekeepers to regularly work their hives without a veil, smoker, or sugar syrup spray.

Without the need for numerous honey supers, the TBH reduces the amount of additional equipment that must be stored making this hive design ideal for urban beekeepers who often have limited storage space available in their apartments. The unusual shape of the TBH also creates an unfamiliarity that tends to make the hive less noticeable which can be a huge benefit in highly populated areas where the need to maintain good neighbor relations is greatly multiplied and there is an increase in the number of people

*Typical combs drawn in a TBH.*



nearby who fear bees or insects. The low profile of the TBH can also help decrease incidence of vandalism and theft.

Being relatively new to common use, the TBH design has not yet been standardized. Top bar hives are being constructed with varying depths, and lengths. Some have entrances at one end of the hive, while others feature an entrance located in the middle of the hive. Some entrances are positioned near the top of the hive, and some are placed at the bottom of the hive. Top bars vary in width and some designs include spacers placed between the bars. All these available options make building the TBH a lot more fun and much more forgiving when compared to the exactness of dimensions required when constructing a Langstroth hive.

It is also easier to position the TBH at waist height to make the hive easier to inspect and manipulate by simply designing an appropriate hive stand.

#### **Non-exclusive Benefits of the Top Bar Hive**

Then there are the benefits of the TBH that are often touted by top bar enthusiasts that are not exclusive to the TBH since they are also things that can be accomplished with standard Langstroth hives. They include allowing the bees to build their combs naturally without foundation, and regular comb removal and replacement. All of which can easily be accomplished with a Langstroth hive.

While naturally built comb in a TBH will start out with an oval shaped pattern, when fully drawn out it ends up taking on the shape of the hive with a flat bottom section and two straight slanted sides. This shape is closer to the natural oval shape that bees will normally construct when building comb that is not contained by the sides of a hollow cavity, though it is not all that different from the rectangular shape of the Langstroth frame.

The process of producing free-form comb in a TBH allows the bees to build cells any size they like. This can occur in a Langstroth hive as well by simply using a wooden guide on the top bar instead of foundation, or only using thin strips of wax or foundation to help guide the bees efforts.

The TBH is said to help save the beekeeper's back since the single frames of comb are manipulated individually. However, a number of



*TBH's don't need to be fancy or expensive . . .*

older beekeepers who are not able to lift full supers and hive bodies already manipulate Langstroth hives by removing one frame at a time from their hives as well. A slower process but very doable.

Since inspection of the TBH is a slower process, many believe that this translates into better care being taken of the bees by the beekeeper who is likely to be more observant and less likely to crush and injure bees during manipulations. My own observations however are that there is nothing stopping a beekeeper from inspecting a Langstroth hive in a slow and methodical manner and that a slower process does not necessarily translate in to better care of the bees.

Along the same lines, one of the benefits of top bar hives being promoted is that once a TBH has been filled with honey, regular harvesting of honey frames is required to provide room for the colony to continue to expand and help prevent swarming. This forces regular inspections of the hive and increases the likelihood that potential problems will be caught early. While this may be true, it is not necessarily the case and a true procrastinator could easily put off needed hive visits anyway. Meanwhile, a well organized self-motivated individual can certainly make regular hive inspections of a Langstroth hive a part of their schedule.

Some commercially available TBHs have a built-in observation window. Definitely a fun and handy

feature for the backyard beekeeper, but not something that needs to be exclusive to the TBH. Though it would increase the cost of the hive, manufacturer's of Langstroth equipment could easily incorporate such a feature into their hives if they chose to. Is this an opportunity for some enterprising woodworker?

Perhaps the biggest attraction to the top bar hive for beekeepers is that it is an alternative to the industrial model of beekeeping. As the damage inflicted upon the biosphere by industrial agriculture becomes more pronounced increasing numbers of people are questioning its wisdom. This industrial model relies on toxic chemical pesticides and antibiotics, and has been implicated as contributing to the CCD problem. The TBH is a clear break from this industrial model. However, it must be said that just because a beekeeper may choose to keep bees in a Langstroth hive, does not mean they must follow the industrial model of beekeeping.

#### **Drawbacks/Challenges of the Top Bar Hive**

Due to the limited amount of room for honey storage, bees that are conservative in their honey use are more desirable as TBH residents, otherwise additional feeding tends to be needed.

I am not aware of any evidence that the elongated shape of the TBH is a more natural hive shape and preferred by the bees. My own observation is that European honey



... but they can be both, with viewing windows and handles, and other details.

bees seem to prefer to work vertically rather than in the horizontal orientation of the TBH. Whenever I have seen a swarm settle in an open area where comb building was not limited in any direction, the bees have tended to build six to 12 combs that were longer, rather than the 30-40 or so short combs found in the top bar configuration. The TBH shape may be perfect for the African or Africanized honey bee given its habits and the climate it lives in, but I am not convinced that it is the best cavity shape for the European honey bee in North America or Europe. That said, the honey bee is incredibly resilient and can certainly adapt to whatever size and shape cavity it is introduced to.

Some of the potential benefits of the TBH may also become liabilities. Having to visit the hive regularly in order to provide more space in a hive that is full may not always be convenient or possible. Since it takes more time and therefore more labor to inspect a TBH compared to a Langstroth hive, it is more of a challenge for commercial and sideline beekeepers who utilize this style of hive.

In addition, the lack of standardization, while allowing wonderful creativity in design, can result in problems. I have opened TBHs that were built with a wooden cleat attached to the side of the hive upon which the top bar frames rested. This made it difficult to slide a tool down the inside of the hive when cutting combs free of the sides so they can be removed without tearing them apart.

TBHs with flat inside walls are much more desirable.

Besides having the top bars rest on top of the hive, other standardizations that seem to make sense to me would include:

- Making all top bar hives the same width. My suggestion would be to use the same top bar dimension as the standard Langstroth frame (19 inches) so that frames could not only be moved easily between TBHs but also between TBHs and Langstroth hives and vice-versa.
- Making all TBHs the same depth. The ability to move frames between top bar hives would allow for nuc making, equalizing hives, and boosting weak or queenless hives with brood and eggs. While the deeper the frame the better, I would think that a minimum of 10-12 inches would be called for.
- Entrances located at the end of the hive.
- Top bars fit tight together with no spaces between bars.
- Hives at least 2½ - three feet long in Southern climates and four to five feet long in Northern areas.
- Kenyan style rails protrude from the ends of the hive to provide convenient handles for moving the hive and a place to hang frames that have been removed during inspections.
- A screened bottom to facilitate ventilation and help reduce mite loads.
- A removable stand to make the hive easy to relocate.

While I would love to see a group of committed TBH suppliers and users work together to come up with a top bar hive design that everyone could agree on as the best all around design for everyone to use, the reality is that we are talking about beekeepers here. Trying to get two or more beekeepers to agree on the solution to any beekeeping question tends to be problematic at best.

### **Non-Exclusive Drawbacks/ Challenges to the TBH**

The TBH needs to be level in order for the bees to build straight free-form combs, just as when allowing bees to build natural comb without foundation in a Langstroth hive. Honey production is limited when combs are regularly removed from the hive, whether using a Langstroth or top bar hive.

Going into Winter it is important for the brood area to be located at one end of the TBH with honey stores laid out toward the opposite end, just as significant stores of honey should be above the brood nest in a Langstroth hive. Handling the top bar frame is different due to the lack of side and bottom support. This is not necessarily a drawback unless you are used to handling Langstroth frames and have to unlearn old habits.

### **In Summation**

Ultimately it would seem that the top bar hive design is not necessarily better or worse than the Langstroth hive design. Under certain conditions, various races of honey bees and types of beekeepers may do better with one or the other. The TBH is simply another way to keep bees. It may work better for you given your situation, or it may not. In the end folks that vilify one style of hive or the other are not doing anyone a favor. What is important is the way in which the bees are being cared for not the type of hive they happen to be housed in. Each individual should choose the style of hive that makes them feel most comfortable so they will enjoy their relationship with their bees. With a few exceptions, most beekeepers are interested in doing everything they can to support the health of their bees whether they use top bar hives or Langstroth hives. It is this common ground that we need to nurture while supporting one another in the process, since no one has all the answers. **BC**

# BUSMAN'S HOLIDAY

## Beekeepers Visiting Beekeepers

Duane Waid

They call it a "busmans holiday," you know, when a bus driver takes a vacation, then goes on a motor coach tour. Well it can happen to beekeepers as well, and if done right, it can be a real learning experience.

This writer, a sideline beekeeper from the Finger Lakes area of central New York State, annually gets the urge, about the first of February, to get away from it all and go south for some sunshine and rejuvenation. This year it was my good fortune to hook up with my friend Bill Hilker, who with his wife, Shirley, had grown up in the Lake Wales, FL area where we were vacationing, and who is acquainted with many of the beekeepers in that area.

At home, near Ithaca, NY, Bill is a hydroponic gardener and a beekeeper. He invited me to go with him to visit some local beekeepers and I enthusiastically accepted. The various trips proved to be not only enjoyable but most educational.

I wasn't surprised at all to find every beekeeper we met very cordial, willing to answer our questions and demonstrate how beekeeping is done in the far south. It seems that beekeepers are just that way.

### MAKING UP NUCS TO BRING NORTH

Our first contact with bees, in FL, was at Bill Hilkers place where he is starting some hives to take back to NY when he migrates home in late March. One of the problems northern beekeepers have, is obtaining nucs early enough in the spring. Bill's main hydroponic crop is strawberries so he needs bees early for pollinating them.

It makes sense to me, that if one can be in Florida, or any of the other southern states, long enough to do so, to make up nucs and get them back north in time to build up on the early flows.

Bill brought empty equipment from home, hive bodies

stapled to screened bottom boards, and stocked them with 10 frames of brood and bees, with new queens, purchased from David Miska of Groveland. By the time we saw them March 2, all except one queen was laying in the second story and there was ample brood down below. He will rent a trailer to transport them north.

If everything goes well for Bill, I might just steal his idea come next year.

### DIVERSIFICATION

We have for some time practiced a certain amount of diversification in our own business, raising apples, nuts and berries to sell at farmers markets along with our honey, candles, pollen and other products of the hive.

We were fortunate to be able to spend some time with Aaron Griner who lives in Lake Wales but spends much of his time on his ranch east of town just off Rt. 60. He is a master of diversification, who, along with his bees raises blueberries and a very large plot of vegetables. He sells most of his honey in barrels to an area packer and his produce is mostly given away to friends and to those who have a need. It is a labor of love. "I keep bees", he says, "so that I can afford to do the gardening."

Aaron was recently named "Pioneer Beekeeper of the Year", and is most interesting to talk to.

I was fascinated by his honey house setup which features an extractor which spins out 12 supers of honey at a time with the frames still in the boxes.

The frames are scraped and uncapped, replaced in the supers which are then slid into the horizontal extractor, three supers at a time, pushing out boxes which have been spun out. This was all new to me.

Aaron doesn't know how old the machine is or who made it but says that it does a good job . . . fast!



Aaron Griner.



We are really impressed with Aaron Griners unique extractor which spins out 12 supers at a time, each containing eight frames of honey. wow! That's six buckets per load!



As Aaron Griner unloads palletized hives full of empty drawn comb, Adam Struthers pulls frames of brood from his hives, to make up three frame splits. Once back in Aaron's yard, the new hives are fed sugar syrup and are ready to receive queen cells the next day.



Aaron runs eight frames in 6-5/8" supers for honey over two full size hive bodies, reducing hives to a single brood chamber when he supers for orange blossom. He does not use queen excluders.

We were fortunate to be on hand to help Aaron move a truckload of single, full depth hive bodies to Adam Struthers yards, where Adam pulled frames from his stronger hives to make up three frame nucs in Aarons equipment. Pallets of four hives were lifted on and off the truck with a Bobcat, making the job much easier than

handling single hives. The hives were then moved back to Aarons place to await queens or queen cells. Division board feeders were filled with sugar syrup to give the nucs a boost.

We weren't allowed to leave until we helped ourselves to some fresh produce from Aarons garden.

#### RENAISSANCE MAN

It was a cold, rainy day when we first dropped in on Bill and Martha Carpenter, of Frostproof, but we were cordially invited into their home to set and chat 'till the weather straightened up enough for Bill to show us around.

We were there only a short time before we realized that they had earned a enviable reputation as queen breeders. Numerous calls were received during our visit, from people ordering queens or scheduling shipping. The cold weather in Florida this year had slowed down queen breeding (and beekeeping in general), but one could sense Bills desire to get queens to his customers when they were needed.

But the Carpenters are much more than queen breeders. They sell honey from their home and Bills business card lists metal work, hydraulic and mechanical services, and one can tell by the extensive collection of equipment he has, that he is serious about it. Because of all the



Struthers' Honey, on Rt. 60, Lake Wales, FL is an interesting place to visit (and buy honey).



While we were there several customers made selections from the awesome display, spent time perusing the news clippings gracing the walls, picked up literature and paid for their wares.



This bench in front of Struthers' honey display doubles as a cash depository for this great serve-yourself operation.

breakdowns that are common to agriculture, we would say that Bill would be a good man to know.

From queen grafting to wax melting, Bills shops are complete with tools of the trade, many of them home made or modified by him to do a better job, more efficiently. We left with the knowledge that we had been in the presence of a master craftsman, this gentleman known as "The Renaissance Man."

### HONEY . . . A POUND OR A TRUCK LOAD

When we first saw that sign along SR 60, a few miles east of Lake Wales, FL, we knew that Struthers' Honey Inc. was more than just your average beekeeping operation. Now a fifth generation family business, Struthers Honey was founded in 1935 by Harold and Mary Beth Struthers. Today the operation is headed by Alden and Lotta Kay Struthers who run several thousand colonies for honey and pollination along with a most impressive serve-yourself honey store.

When we first visited there, Alden was on his way out, but cordially invited us to look around. We found his brother, Glen, and his son, Ben, busy repairing broken frames (which had been steam-cleaned) and installing new foundation before returning them to supers. They use medium depth supers over full size brood chambers with eight frames in the honey supers for extracted honey and 10 frames for cut comb.

We were interested in the jigs being used to hold the frames while they were being repaired and took some mental notes, with the intent of making myself a couple of these when we get home.

Glen, we learned, travels with the birds, back and forth between Minnesota and Florida, operating several hundred hives in each clime.

I was impressed with the enclosed unloading dock where incoming supers of honey can be unloaded without inviting every bee in the county to join the party.

Located just inside the honey house is their Guinness uncapper and two 84 frame extractors, all draining into a common sump. Honey is then gravity fed into huge settling tanks in the floor below.

Equally impressive is the honey store, conveniently located just off the highway, on the end of the honey plant. Shelves were amply stocked with Orange Blossom liquid and comb honey, honey candy and pollen. Neat and clean, throughout, the walls are lined with posters and information about the beekeeping industry along with clippings related to the history of the company. Several customers came in while we were there, most of them stopping to read some of the literature, which demonstrated to us the usefulness of using such information in ones marketing scheme.

The fact that this well stocked store is run completely on the honor system demonstrates the Struthers faith and trust in mankind. Are they ever ripped off? "Not enough to discourage us from operating this way" explains Lotta Kay. "What little loss we might have, is far less than what it would cost to hire someone to man the store."

We find the same to be true at our small stand in New York. Basically, people are honest.

### THE GRAND FINALE

Topping off our "busmans holiday" was an invitation to attend the February meeting of the Polk County Beekeepers Association, in Bartow. Kelly McKinnes is



*We like this "indoor" dock where honey supers can be unloaded with relatively little interference from uninvited bees.*

president and Martha Carpenter is the treasurer. This meeting was held in a private dining room at a Perkins Restaurant, where those who wanted to eat could order from the menu, (and most everyone did) and much of the business at hand was conducted while orders were being taken and the food was being served.

A short power-point presentation was given by Kathryn Nalen and Mark Dykes from the University of Florida Honey Bee Research and Extension Lab detailing their work on honey bees.

Members submit a question to be discussed during HIDI, (How I Do It), at which time the floor is opened for those who wish to do so, to tell how they would handle that particular situation. We are all aware of the fact that if we ask three beekeepers the same question, we will likely get three different answers, but, this is a great way to lay out the options for the novice, or the experienced beekeeper to choose from. This is a very good idea for other clubs to try.

Without a doubt, the most valuable thing about attending any club meeting is the interaction between beekeepers. For instance, those we talked with had no experience with the Africanized honey bee and felt that in the central Florida area there was no problem (contrary to what we had previously believed). Talking with Mr. Dunbar, from Roseville, Mich., we learned a new way to collect propolis and picked up some new ideas for making a tincture.

The small hive beetle and the wax moth appear to be much bigger problem in the south than they are up north where freezing weather helps with their control. North or south, keeping strong colonies is important. The *Varroa* mite is just as big a problem here as it is up north, perhaps more so, because in Florida there isn't that long break in the brood cycle, which helps keep *Varroa* populations in check. Treatments are about the same with IPM gaining in popularity.

Southern beekeepers are talking about many of the same problems that we talk about in the north: slow colony build-up, queens not being accepted, lower production, etc.

We could go on and on about our busmans holiday experiences but, instead, we suggest that you try it for yourself. We believe that it will help you to become a better beekeeper.

Isn't that what we are all trying to do? **BC**

# SHIPPING LIVE BEES

Jennifer Berry



*My queens start out alive and healthy from my beeyards . . .*

Back in the day, (prior to computers, cell phones, and texting), communication with someone far away was done primarily through the mail. If you wanted to reconnect with a friend from high school, there was no facebook so you sent a letter. If you wanted to wish someone happy birthday there were no Ecards available, so you mailed a card. If you wanted to see how a relative was doing, you wrote a message by hand, put it into an envelope, sealed, addressed and stamped it, walked it to the mailbox, put it in, raised the flag and waited days, weeks, maybe even months for a response. Oh, the good ole days. Over the years, as technology in telecommunications has advanced, the need for mail service decreased dramatically; information was only a

phone call away. But the Internet has probably been even more instrumental in causing the near extinction of the hand written letter. However, for some of us the mailbox used to be a treasure-trove, back in the day.

There was something magical about that ole black box possibly holding, at any given moment, that most desired, ever anticipated package or envelope - the one you'd been waiting for seemingly a lifetime. When that day arrived, you opened the mailbox and there it was - the manila package with your, yes, *your* name on it. Finally! Will it be the magic kit that you ordered with the 10 bubble gum wrappers, or the sea monkeys from the cereal box tops you'd been saving?

The mailbox also added a sense of adventure. During a recent visit with my father our conversation turned to the innocence of youth and how during his younger years the mailbox held adventures beyond imagination. My dad grew up listening to the radio with the afternoon shows geared for kids. Following those shows were ads for all sorts of "must have" items that were to protect him from the enemy. It was during the war and the enemy could be anywhere hiding out in that small town of Owensboro, KY. He had the decoder ring to decode important messages only privy to him. He had the rear view mirror ring so he could periodically see if the enemy was sneaking up behind him. If he did see someone/something suspicious he could use his whistling ring to muster up help. But if for some reason the

covert operation called for complete silence, he could write a note for help, secure it to a tiny airplane on his ring and then jettison it off to his comrades in arms (hoping of course they were only a few feet away).

Because of the times he rarely traveled out of that small town in Kentucky as a boy so the mail box was his link to the outside world. A quarter and a cereal box top was his ticket to Battle Creek, Michigan, the cereal capital of the world.

But today that ole black box is rarely used except for unwanted bills, and junk mail. Other than Christmas cards, I never write letters anymore. Today I walk to the computer, turn it on, write my note to whomever, and hit the send button. Done! But there's something impersonal about that. Maybe that's why Christmas cards are still so popular. It's the one day a year we take a moment, turn away from the computer screen and by the light and crackle of the fire, while snow flakes gently settle to earth, and dogs snuggle around our feet, we sit down, sip warm cocoa, and actually put pen to paper.

Before starting this article I "googled" information about the post office. The post office has been around much longer than I had realized. Actually, the United States Postal Service (USPS) has been around for over 231 years. Prior to the signing of the Declaration of Independence a postal service did exist but it wasn't until July 26, 1775 when the 2<sup>nd</sup> Continental Congress agreed to





... but too often end up not alive at all.

appoint Benjamin Franklin as Postmaster General. That day the USPS came into existence. The principle then and now is that "every person in the United States – no matter who, no matter where – has the right to equal access to secure, efficient, and affordable mail service." Back in the day, the postal service was the only means of communication available and "efficient" mail service may have existed. But times have changed.

Over the years I've found that shipping through the post office can be a real challenge but when dealing with something live, that's a whole new ballgame. Awhile back I started raising queens, and finally took the plunge last year to begin selling them. However, the thought about shipping queens didn't set well with me. I decided queens would only be available by pick up. Well, that didn't work since it limited my customer base dramatically to an area around

Athens. So I looked into the process of how to safely ship queens. I called several queen and package producers to get their feel on the situation. They basically told me this; shipping queens is no picnic. And here's why:

Shipping live animals used to be more common, but now it's becoming more and more difficult. FedEx won't even consider shipping live queens or package bees. Since most of their service is completed by air the company fears packages would leak during the flight releasing thousands of "not so happy" bees. A situation they don't want to experience plus they don't want the liability. So no option there.

Next is UPS. They will ship live animals but won't guarantee live delivery. In other words UPS won't insure their safety. UPS however will guarantee that the package will arrive on time, just not alive. The USPS will

insure live delivery, however will not guarantee arrival time. Arrggh! Hence the frustration!

Each time a queen is caged a thought crosses my mind. Will she actually make it to her final destination alive and well? Once I put her into the envelope and hand her over to the postman, I no longer have control over the situation. It is now up to the post office to process the package properly, get it to its final destination on time, and then for the beekeepers to NOT do something stupid like leave the package in their garage for days because it was just too hot to go into the hives, or leave them on the dash of the car while stopping for a bite to eat, or leave them on the kitchen table for their cats to munch on or . . .

Rearing queens is not an easy task. If you have done it yourself then you know the time involved to successfully raise a quality queen. By the time a queen is caged there's not only the minimum 45 days invested into her, but the time and money invested into a whole series of things; the breeder colonies she was grafted from, the starter finisher colonies she was reared in, the mating nucs she was housed in, and finally the drone mother colonies in which the drones she mated with were produced. So when I hear the comment "Relax lady, it's only a bug" after losing queen/s in the mail, I don't take it so lightly. Also it hurts my feelings when someone doesn't treat packages labeled **Live Honey Bee Queens** with just the normal amount of care.

In the past year I have lost a total of 38 queens in the mail due to mis-handling, carelessness, or other inefficiencies. That's almost 10% of the total number of queens I've shipped so far. That to me is insane. Some queens were left in mailboxes



**Modular  
comb honey  
section**

**"Honey tastes  
better in the  
Halfcomb"**

For information visit  
[www.halfcomb.com](http://www.halfcomb.com)  
For free tutorial DVD contact  
[Halfcomb@gmail.com](mailto:Halfcomb@gmail.com)

**THE WILBANKS APIARIES, INC.**

SUMMER QUEEN PRICES AVAILABLE JUNE 1ST - NOVEMBER  
Caged fresh from our yards. Available all summer and fall.

			
			
<u>1-9</u>	<u>10-24</u>	<u>25-99</u>	<u>100-up</u>
\$16.00	\$15.00	\$14.00	\$13.00

Queens Clipped \$2.00 ea. • Queens Marked \$2.00 ea.  
Queens can be shipped by Priority or Express Mail INSURED,  
or by UPS Next Day UNINSURED.

Box 12  
Claxton, GA 30417  
912-739-4820  
FAX: 912-739-4821

**THREE BANDED ITALIAN QUEENS**

(black mailboxes in full sun during the Summer months even though it states very clearly all over the package **PLEASE DO NOT LEAVE IN MAILBOX or IN THE SUN**), some in the bottom of a bag, some never made it to their destinations, some took weeks to arrive, some were on time but just dead. And here's the kicker, since these queens are insured I have to wait 90 days before a file can be claimed and usually they want the customers to file the claim, not me.

Last year I sent several queens to South Carolina, a destination that would have taken me four hours to drive to from Athens. The queens were mailed two to three day priority, on a Monday and arrived 10 days later, the following Thursday. Fortunately, they were still alive. Queens sent to a customer in Montana mailed priority took 14 days and again the queens were still alive. Queens mailed to Huntsville, Alabama, a three hour drive from Athens, arrived in 12 days after the said delivery time. Those girls were not so lucky. Because of these and other negative experiences with the post office I've decided to switch to UPS even though they don't

insure live arrival. Here's a bit of information I found on the web about their history.

UPS got its start in 1907 in Seattle, Washington when a young James E. (Jim) Casey borrowed \$100 to establish the American Messenger Company. Out of their basement headquarters messengers ran errands, delivered packages, carried notes, and even delivered trays of food. Jim's brother along with numerous other teenage boys, ran these assignments by foot or bicycle since automobiles were not as common then as they are now. Yet as advances in technology increased so did the abundance of autos and telephones, hence the need for a messenger service quickly faded. So the company focused more on package deliveries primarily for department stores. As time marched on so did the company. By 1919 the company expanded beyond Seattle to Oakland, California. The company also changed its name to United Parcel Service and in a few short years expanded to Los Angeles and then to all major cities on the Pacific coast. By the 1930's the company had reached across the US

to include cities on the East coast. Quickly it became a leader in the parcel business, adding air service across the country and today across the world. A near 12 million envelopes, packages, boxes and crates are shipped daily through UPS.

I have not yet dealt with UPS on a professional basis so the jury is still out. Hopefully my experience will be better, if not, maybe "pick-up only" will be back on the table. But it still saddens me to see that ole empty mailbox, with it rust spots and floppy flag not standing at attention.

See ya! **BC**

*Jennifer Berry is the Research Coordinator at the University of GA Bee lab. Contact her at [Jennifer@BeeCulture.com](mailto:Jennifer@BeeCulture.com).*

**Blue Sky**  
bee supply.com

FREE CATALOG: (877) 529-9233  
P.O. Box 1837, Hiram, Ohio 44234

Walter T. Kelley Co.

Manufacturing Quality Products at Fair Prices for 86 Years



Uncapping Kits  
Extractors  
Bottles and Jars  
Custom Labels

1-800-233-2899

[www.kelleybees.com](http://www.kelleybees.com)

To market,  
to market  
To buy a ...  
**Jar of  
Honey!!**

Walter T.  
Kelley Co.  
can get you  
from the flower  
to the market!

# Fixing Winter Kill

Sophia Sparks

My father, Greg Sparks, grew up working on his relatives' farms and ranches in Nebraska and graduated from the University of Nebraska in 1979 with a B.S. in Agriculture. When the opportunity came to purchase a 14-acre farm in 2004, he decided to try his hand at beekeeping. It was an unlikely choice for the full-time airline pilot who had no experience with bees. He began planting fruit trees and vegetables on his new property and wanted to increase pollination with bees but without the use of chemicals. He bought two hives from a local beekeeper but quickly ran into problems when the bees perished in the late Winter or early Spring, along with a multitude of pest problems which included mice and wax moths.

Sparks began to research the dilemma, reading articles and asking local beekeepers for advice. His knowledge of conventional agriculture and reading various books which included "A Spring Without Bees" written by Michael Schacker, pointed him to the fact that there was too much chemical stress on the bees. He quickly realized that factors such as systemic pesticides and herbicides, which contaminate the pollen and nectar from surrounding commercial agriculture, were also contributors. Plus, *Varroa* mites were also strongly indicated.

When asked about his first major failure, he said, "Looking back the hives were weak and my equipment was old and unsanitary, and the bees were not vigorous enough, along with being a novice beekeeper. I also made the mistake of not joining a local bee association which has men and women with decades of experience. These people were enthusiastic, came from all walks of life, and were both amateurs and professionals but collectively all had an enormous amount of experience. This would have saved me a lot of grief." Another detriment to his conventional old system was the humidity produced by the wintering nest. "There was nothing worse than finding dead bees in late February or early March with plenty of honey and pollen above them. I had wrapped the hives and used other techniques and none of this was working."

Bees found in nature will go for the hollow of a tree. The wood fiber within the hollow will absorb and eventually distribute the moisture produced by the wintering beehive, therefore preventing condensation. This prevents high humidity building up in the hive during early Spring when the temperatures start creeping over the freezing mark making for damp conditions within the hive. Various methods have been used to address this: one is to place burlap material over the top bars of the hive allowing



*The Condensation Board, and how it fits in a double deep for Winter.*

moisture to be wicked away. Others have used sawdust or other absorbent materials such as newspaper above the top bars. In any case, the issue of dampness and temperature in northern climates has to be addressed for the survival of bee colonies.

After his first abysmal failure, Sparks did not want to continue to buy bees at \$50-60 dollars for a two pound package that would eventually die. Determined to succeed, he contacted a beekeeper in Ohio who had developed a system without using the classic method mite strips or any chemicals in his hives. It was totally organic. This experienced beekeeper told Sparks to spend a day with him to learn his system and then implement the ideas. Enamored with the experience and the possibility of success, Sparks adopted a similar version and purchased the necessary equipment.

First, he changed the type of bees and ordered Kona Queens (Carniolans) bred to Italian drones, unlike the bees he had bought before. These bees produce offspring quickly during the Spring and slow down when the nectar flow decreases in the Autumn. He changed from a solid wooden bottom board to a screened bottom board with a pan insert underneath coated with vegetable oil. Most mites fall onto the oiled pan and become stuck, preventing any further damage to the hive. The new design allowed him to regularly inspect for mites and had the added benefit of examining what type of pollen and blossoms the bees were visiting. It also increased air flow, a principal that was essential to year-round colony survival with the new method. The pan is removed in the Autumn when



The ventilated modified cover aids in ventilation.

the threat of mites decreases. In addition, he drilled three, one-inch holes along the length of the inner cover on both sides, providing yet more airflow through the hive. "You feel like you're making Swiss cheese out of a very sound structure," says Sparks.

With this new design, the top cover is manufactured to be deeper than standard size and has three one-inch holes drilled on the east and west sides of the hive. There is no entrance blocker used during the Winter and unlike a standard bee hive, the key is free airflow even in Winter. The entrance has been reduced from 7/8 to 3/8 of an inch. Sparks states that, "Heat produced by the wintering nest flows toward the colder areas within the hive which is the north side," and this is where the condensation board comes into play. In the Autumn after the last honey extraction he removes two frames from each hive box. Then he inserts the condensation board which consists of an empty frame with two sheets of melamine board tacked to each side of the frame, and places it into the north side of the hive. The condensation board hangs all the way to the bottom allowing for the moisture from the bee nest to condensate on the cold side of the hive and drip through the screened bottom board. The white slick side allows for condensation and drainage of moisture and the fibrous back part of the board absorbs some moisture. Along with the condensation board being inserted, a fall feeding of sugar water and Honey-Bee-Healthy is

started before temperatures drop below 45°F.

Sparks had his reservations about the new free-flow air system. "Initially I thought this guy and his idea was crazy, ventilating a hive throughout Winter in northern Illinois, but my success rate had been zero percent so it couldn't get any worse." He started with two hives using this new system in the fall of 2005. "I really could not believe my eyes when I saw that both hives survived and did well that Spring. Air is allowed to circulate freely throughout the hive in this frigid environment which shows just how well the bee nest is organized in the Winter and what it can handle." In the Fall of 2006 he added two more and all four hives were a success. By the Fall of 2007 he doubled the count to eight and all made it through the Winter. The year of 2008/9 was another success for his eight hives and during the Summer of 2008, he had three swarms which he captured. "The swarms were vigorous and I had extra comb and they immediately built enough comb and made enough honey to make it through the Winter. I still wasn't convinced that this system was the answer. I had three hives I hadn't planned on and decided not to build condensation boards for those hives to test this theory which seemed to be working so well." All hives were alive in early January this year but on March 5th when the temperature went above 45°F Sparks went out to feed the hives his sugar solution and found out that three hives had died. "I hate losing any living thing but when my wife asked which hives they were I went back to the hives with my tools and started taking them apart. All three were the swarm hives and did not contain the condensation board." The swarm hives had plenty

of food above them and when he saw the bustling activity of the other eight hives he said, "I am convinced that a system that keeps bees dry and has their immune system boosted with a supplement and are well fed will succeed. This Winter was the real test though because they had plenty of snow and damp conditions the first part of December and the weather had remained cold for most of the Winter." Sparks says he is fortunate to live in an area with a lot of residential agriculture, and very little crop spraying, minimizing the chemical exposure for his bees.

In six years, Sparks has gone from zero percent survival to a one-hundred percent success rate for four consecutive years using this ventilated/nutrition system, an impressive turnaround for any novice. "It's not just one thing that works, it's the entire system. You must use up-to-date equipment, proper hive management and a good nutritional supplement. Beekeepers must provide an environment with adequate air flow and moisture levels that mimic nature in supporting this beautiful insect which pollinates over 66 percent of the food we eat." **BC**

*Greg Sparks is a beekeeping and organic garden enthusiast living in northern Illinois. He is a member of Stateline Bee Association that meets in Freeport, IL and attends the MOSES organic conference in Lacrosse, WI during the month of February.*



Order today!  
Ready-Made PollenPatties

From  
Global Patties

In North America Call Toll Free  
1-866-948-6084

Elsewhere worldwide call 1-403-948-6084 or email [mike@globalpatties.com](mailto:mike@globalpatties.com)

"We make Protein Patties for Honey Bees to your specifications"

Visit us at [www.globalpatties.com](http://www.globalpatties.com) for the latest news on pricing, quantities, discounts, shipping and distributors

Ask us for a quote on your requirements for the coming season. You'll find that Global is faster, better and cheaper than your other options.



# ELECTION TIME!

*Who does what in your association? A good job description will help.*

Ann Harman

It is that time of year for the Nominating Committee of the East Cupcake Beekeepers Association to search for next year's officers. So armed with the membership list the committee members start to work.

A new president needs to be elected. After a bit of discussion the committee has decided that the best way to ask someone to run for president would be to say "We would like very much to nominate you for president." They ruled out "Would you like to run for president?" It's too easy for someone to say "No."

The response from a prospective nominee was not really a surprise. "What does the president have to do?" All the Nominating Committee member could think of was "Run the meetings." Sounds easy, but is that really all the president is expected to do?

Rummage around in the association files and see if your association has something that describes the duties expected of all the officers. Yes, consult the Constitution and Bylaws. Were they any help or are they very detailed or even hopelessly outdated? Perhaps they need an updating, but that is another project.

In many ways listing duties in great detail in Bylaws can be too restrictive. Associations change; members change; programs change; activities change. Bylaws are notoriously difficult to change. It is far better to develop a working document listing duties for each officer and be willing to change those to keep the association running smoothly. It is also better to have flexibility in order to find nominees for the various positions.

Let's see what some reasonable duties of an association president would be. To be formal, the president should adhere to the purpose and objectives of the association. Yes, "run the meetings" but why not specifically say to preside over the business meetings. This statement opens the possibility for other members to preside over special events or programs. A president can call for special meetings, such as joint meetings with nearby associations or meetings to hear a visiting scholar who is only available at some specific time. The president would be the one to appoint committee chairpersons of both standing and special committees. The president is also responsible for seeing that any committees are accomplishing their tasks on their prescribed schedule.

One important point to remember is that the president should be authorized to make deposits into the bank account and disburse funds if the treasurer is not able to do that. In other words, the president would be the other person able to sign checks.

In these days of the Internet and websites, the president of any association, local or state, can be discovered. Would it be wise to inform the prospective president that various inquiries will be made? "I want to have some bees; where can I get some?" "I need some bees to pollinate my

pumpkins; can you do that?" "I've got bees in the wall of my house." Yes, it would be nice to warn the nominee and suggest that a good knowledge of the members' abilities and interests will be useful. Members of the association can help the president keep a roster of swarm catchers, bee removal experts, those giving talks in schools, and others who can interact with the general public. Therefore, the president needs to be a clearinghouse.

Basically the president oversees all the operations and functions of the association and should be ready to pick up the pieces and reorganize if a committee or project is just not working.

Next we come to the Vice President. I have no idea why so many automatically assign the duties of Program Chair to the Vice President. Anybody in the association who is so inclined can be Program Chair. The Program Chair does not **have** to be an officer. So let us see what a Vice President is actually supposed to do.

A brief description would be to perform the duties of the president in his or her absence or by request of the president. Well, that's not much if the club has a good president. However a good president should be able to delegate various tasks so nobody feels overworked. Beekeeping associations, whether local or state, large or small, are run by volunteers. An overworked volunteer will sooner or later disappear. Let the vice president have a few duties that involve the club's activities.

Many see the vice president as president-in-waiting since the president's term in office is frequently limited by the Constitution or Bylaws. Therefore, perhaps the vice president should share some of the president's responsibilities. In this way the Nominating Committee can get an idea how effective the vice president would be as president. However, there should be nothing that says the vice president **has** to become president.

Now we come to two other main officers, or perhaps it is only one. By this I mean that some associations have a secretary and a treasurer. Other associations, frequently small ones, have a shared position called secretary/treasurer with one person serving both positions. This shared pair is useful if the duties of the secretary are minimal.

Secretaries write things down. The minutes of a club's business meetings are essential. However some associations want a description, more or less, of the entire meeting. The description and minutes can be read at the next meeting, or put in the club's newsletter, if there is one, or sent by e-mail to all members. A prospective secretary needs to know what is expected.





Minutes, especially for the business meeting, should be archived. However few associations really keep track of the archived files. And a new secretary may not wish to be handed several heavy boxes to store. So the old information ends up in a box long forgotten in a dusty shed. However, if a few years' worth can be kept that usually suffices.

Let us move on to duties of the treasurer. Treasurers handle the money. Association dues are collected and deposited in the bank. Checks are written to pay for the club's expenses. Sounds simple, right? Well, I can remember back when I was a treasurer and asked to write down in detail what I did. I made a list as I went through my duties. It covered a whole page. I then realized that the treasurer is the busiest officer.

Now for a look at the real details of being a treasurer. Then perhaps we will revisit the duties of a secretary. I said dues are paid. A record needs to be kept of who paid and even if one year or two years were paid. Is there a meeting notice or newsletter that will be sent to members? Now you need to record addresses for mail or e-mail and send them to the appropriate person. Keeping the membership records up-to-date is a challenge. Checks need to be written but receipts for expenses are essential and need to be kept.

New members appear mid-year and other members move far away. True, keeping membership information on a computer certainly saves time but it needs to be done regularly. Now what to do with the members who forget to pay dues? They need reminders or the club will lose them.

Does the association want an annual report on the finances? That needs to be prepared. Bank statements appear regularly and need to be reviewed. Money is spent for meetings, refreshments, meeting room charges, speakers' fees, for postage, and for other supplies. The receipts need to be tracked down and members reimbursed.

In short, the treasurer has lots of things to do. Can the secretary help out with some of the tasks? That depends on careful cooperation between secretary and treasurer or too many things will fall through the cracks. It also depends on the person selected to run for treasurer. That person may wish to handle all the treasurer's duties to

insure that nothing does disappear between the cracks.

Now consider whether a combined secretary/treasurer will work for your club or if the sum of all the duties means that you will never find someone willing to take on all the work. The Constitution and Bylaws frequently do not put term limits on the positions of secretary and treasurer. The result is that I have often thought these officers should get medals for being in office for endless years.

Yes, the Nominating Committee has a tough job and those members probably hear more "no" than "yes." But armed with a good set of officer duties the committee can search for good candidates so that the association will continue to grow and the beekeepers and beekeeping improve.

Wait! We never did the duties of the Nominating Committee. Although the committee members are not officers, perhaps a few words here would make their life a bit easier at this time. The Chair and selected committee members need to be quite familiar with the members who attend meetings in order to select candidates who will be suitable to serve in the various offices. Then during the year until the next election the elected officers can be observed to see if other choices need to be made. The committee also needs to keep in mind that long years of beekeeping do not necessarily make a good officer. A newbie could be the wisest choice.

OK Nominating Committee – don't take "no" for an answer! **BC**

*Ann Harman is seeking good officers from her home in Flint Hill, Virginia.*

**MILLER BEE SUPPLY**

888-848-5184

WWW.MILLERBEESUPPLY.COM  
WOODNWX@EMBARQMAIL.COM

496 YELLOW BANKS ROAD ~ NORTH WILKESBORO, NC 28659

**63 YEAR BEE & HONEY COMPANY LIQUIDATION AUCTION**

**Wednesday, October 6, 2010 10:00 AM**

**Auction Location: Odessa, MN: Main Street**  
Watch for Zielsdorf Auction signs.

**BEES - HIVES INCLUDING BEES**  
**HONEY EXTRACTING EQUIPMENT**  
**BUILDINGS**  
**Heated Shop & Storage Shed**  
**TRUCKS AND MISCELLANEOUS**

To see complete sale bill, see our website!  
**BID ONLINE LIVE!**  
See [www.zielsdorfauctions.com](http://www.zielsdorfauctions.com) for details.

**ELLINGSON, INC.**  
**MAIN STREET, ODESSA, MN**  
**CONTACT DAVID ELLINGSON**  
**320-760-6769**

**Fragodt Auction Co.** 320-843-3003  
Randy Fragodt, MN76-12  
800-394-8731  
3154 Hwy 40,  
Appleton, MN 56208

**ZIELSDORF** AUCTION & REAL ESTATE SERVICE  
AUCTIONEERS & CLERK:  
Zielsdorf Auction & Real Estate,  
119 3rd Street North,  
Bemont, MN 56215  
320-843-3003 or  
Cell: 320-760-2006

[www.zielsdorfauctions.com](http://www.zielsdorfauctions.com)  
Your Farm Equipment & Real Estate Specialist

# HONESTY

*There's hardly ANY honey . . .*

Tom Theobald

When I was growing up my father always stressed the importance of honesty. "You'll get in more trouble if you lie to me than for almost anything else," he would say often. I was a smart kid though, most kids are, and I could see that in the adult world, his included, there were shades of truth, degrees of honesty, times when less than the full truth was convenient or merciful. In his world though, outright dishonesty was a black mark on a man's character. I say man not out of chauvinism, but because my father's lessons were always directed toward the male side of the world, he had five sons and no daughters.

I always admired my dad for his values and his ethics, even though like most of us he had feet of clay and had his demons. At the heart of his philosophy was a solid Midwestern goodness though, based on honor and honesty. He believed that a man should reflect those qualities, should be brave and fair, intolerant of injustice, respectful of women, all the good stuff. Those were his targets. Sometimes he fell short.

I tried to absorb most of that "good stuff" while avoiding the demons and looking back I think I've done pretty well. No angel mind you, but if there's a reckoning I don't think I'll have too much explaining to do.

What got me to thinking about this ing newspaper a few days ago. I have the plastic bag, with a knot tied in the end if it morning when I went out to the road to different bag, one with some advertizing a while, promotions, some manufacturer and the delivery person a penny or two, cents to boot. They are always hyping deodorant – you name it. Sometimes it's time it was a single-serving size box of ce-paper and sat down on the deck to read

It was a day or two before I noticed picked it up. I recalled an article I had that highlight honey in their name while how Honey Nut Cheerios stacked up, so ingredients on the side.

As I'm sure you know, ingredients are first. The first ingredient in Honey Nut I thought. The major ingredient in cereal should be something like that, for Cheerios it's oats. So far so good.

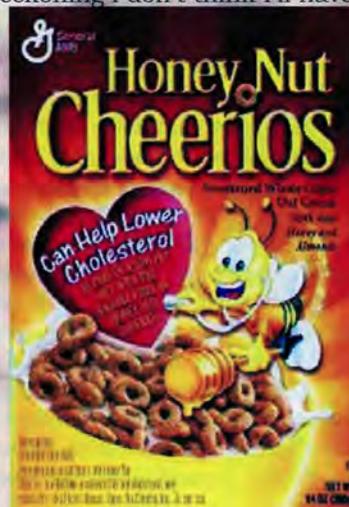
It ends there though. The next largest ingredient listed in Honey Nut Cheerios is Sugar, followed by Modified Corn Starch. And honey? A distant 4<sup>th</sup>, just ahead of Brown Sugar Syrup.

Shouldn't this product legitimately be called Sugar and Modified Corn Starch Cheerios? Of course it should, but who would want to buy that?

But wait a minute, what about the nuts? This is supposedly Honey Nut Cheerios after all, where are the nuts? Well, what passes for nuts is next to last on the ingredient list, just ahead of Vitamin E added for freshness (mixed tocopherols according to the ingredient list, whatever that is). And do we get nuts? Well not really, what is added is natural almond flavor, but no nuts. Do they just wave it over the cereal? There is less almond flavor in Honey Nut Cheerios than there is Tripotassium Phosphate, which is two ahead of it on the ingredients list, so the cereal either has a lot of Tripotassium Phosphate or nearly no almond flavor, and clearly no actual nuts.

The nuts are in the boardroom I fear. I'm sure the corporate managers, the ones who make decisions on products like these, represent themselves as trustworthy, upstanding members of their communities. It's likely that many of them attend church regularly and wear their piety openly, serve on commissions and school boards and all the other things a good citizen would take part in. And yet they market a product like this and call it Honey Nut when there is precious little honey and no nuts at all. This isn't just shading the truth a little, it is outright misrepresentation of a product, affirmative deception and dishonesty. They should be ashamed of themselves.

We wonder why our society is so dysfunctional. Well, in part at least it's because we tolerate this sort of blatant dishonesty and sleight of hand, in business and in government. If there is a reckoning I want to be in the same line as these people so I can hear how they account for themselves and justify the lives they've led. **BC**



was something that came with my morn-paper delivered and it usually comes in a looks like rain or snow. On this particular get the paper I noticed that it was in a on it and in it. This happens every once in supplies the bag, saving the newspaper and the newspaper probably gets a few something – dish soap, laundry detergent, something I can use, sometimes not. This real, Honey Nut Cheerios. I pulled out the it over breakfast. I set the cereal aside.

the cereal sitting on the side board and read a year or two ago about products containing little of no honey and wondered I turned the box and looked at the list of

listed in order of their quantity, the largest Cheerios? Whole grain oats. That's good, I thought.

*. . . and the NUTS are in the Board room.*

# Home Again – Dedicating Langstroth's Birthplace

Kim Flottum



This historical marker is located directly in front of Langstroth's birthplace at 106 S. Front Street in Philadelphia. (Bill Mondjack photo)

On Friday, September 10 2010, about 80 people gathered in front of 106 South Front Street, in Philadelphia, Pennsylvania, to help dedicate a Historical marker commemorating this address as the birthplace of Lorenzo L. Langstroth. Editor Flottum was honored to help MC the event, but many, many individuals had a hand in the process long before the dedication, and for days afterwards.

Special mention must be made for the groups who were instrumental in making this dedication possible. The Pennsylvania Historical and Museum Commission was certainly in on the act assisting, as they always do, when an Official State Historical Marker is placed. And these plaques are not inexpensive, so major contributors included The Pennsylvania State Beekeepers Association, The Chester County Beekeeping Association and The Virginia State Beekeepers Association. Sponsors included The Philadelphia Beekeepers Guild, The Pennsylvania Historical and Museum Commission, *Bee Culture* Magazine, The Wagner Free Institute of Science, Bartram's Garden and Wyck House.

But many individuals made substantial contributions also, including

The Beaver Valley Area Beekeepers, Anne Brennan, Historians Professor William E. Butler & Maryann E. Gashi-Butler and James Castellan, David Dill, Norman G. Matlock, Esq. & Suzanne Matlock, the Monroe County Beekeepers Association, and Matt Redman. Without their involvement this certainly would not have occurred. Carl Flatow, too, deserves mention because as early as last year he began his campaign to have a commemorative Langstroth stamp created and kept the flow going, even after the post office denied the stamp for *this year*.

The dedication program began with comments from Joel Eckel, President of the Philadelphia Beekeepers Guild, with a few additional comments from Kim Flottum, *Bee Culture* Editor. Flora Becker, Esq., from the PHMC commented on why this event was chosen above other applicants. Then Russell C. Redding, Pennsylvania Secretary of Agriculture spoke to the value of the honey bee to his state. The Secretary was followed by J. Lee Miller, President of the Pennsylvania State Beekeeper's Association, who commented on advances in beekeeping due to Langstroth's inventions, followed by the Pennsylvania Honey Queen, Teresa Bryson who addressed



Look carefully, and the presence of L.L. himself can be seen.

some of the history surrounding Langstroth's invention. Following the Queen, Matt Redman, Langstroth Historian gave a detailed and compelling description of Langstroth's life following his invention.

Then, Ms Sherry Smith and Ms Susan Smith-Riedel, Great, Great Granddaughters of Langstroth's, with help from Matt Redman, unveiled the Marker.



Joel Eckel, Philadelphia Beekeepers Guild President.



Suzanne Matlock, talking to a local reporter.



Matt Redman, Langstroth historian climbs the ladder and unveils the marker. (Bill Mondjack photo)

2010 Pennsylvania Honey Queen, Teresa Bryson, Secretary Russell Redding, Kim Flottum and J. Lee Miller, President of PA State Beekeepers Association.



val, which included speakers, open hive viewing for the public, demonstrations, honey and mead tastings and much, much more. These were in several places around the city so everyone could attend some event close to home.

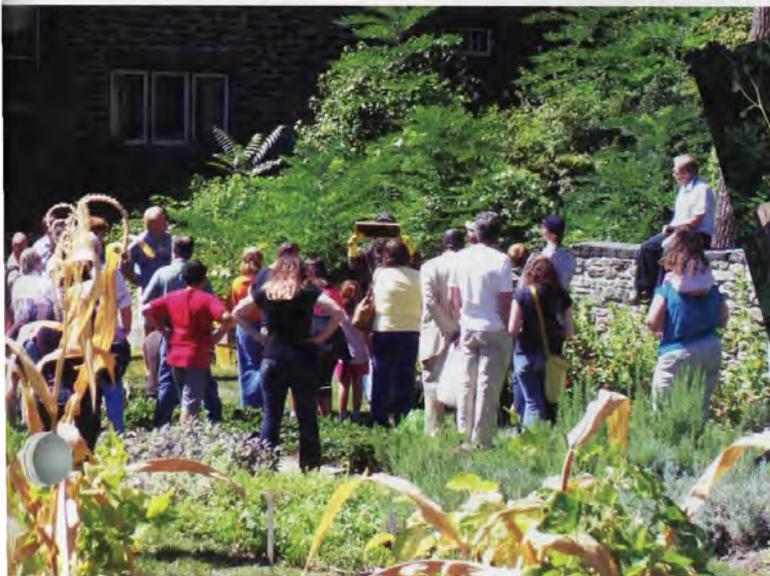
There were many organizations, both professional and volunteer that contributed to this long-overdue

celebration. And many individuals donated time, energy, skills and money to make this a success. But the dedication and hard work, long hours and financial contributions of Suzanne Matlock and her husband Norman must not be lost in the flurry and flash of all of the events. Simply, this would not have been possible without their presence. Thank you. **BC**

The streetside dedication was followed by one large group of participants walking to the nearby American Philosophical Society to view unpublished manuscripts and writings by Langstroth, while the remaining group retired to a nearby establishment for beverages and conversation sponsored in part by *Bee Culture* magazine. They were later joined by the more studious members of the party.

The following two days, the Philadelphia Beekeepers Guild and others sponsored many, many events for the inaugural Philadelphia Honey Festi-

The Montgomery County Beekeepers were there on Saturday with honey, t-shirts and lots of information.



On Saturday, a beekeeping demonstration, vendors, and several talks about bees were given at Wyck House, near downtown Philly.



On Saturday, Ms. Susan Smith-Reidal (l), and Ms. Sherry Smith, Langstroth's two great-granddaughters, were able to visit the Langstroth Commemorative Bench that permanently resides in nearby Morris Arboretum.

# P.J. Mahan & The First Italian Bees



Matt Redman

Lorenzo Langstroth, a native of Philadelphia, happens to be the nation's most famous beekeeper. However, that city boasts another notable beekeeper, an interesting character by the name of Phineas Jenks Mahan, born January 22<sup>nd</sup>, 1814. Though nowhere mentioned by Florence Naile in her biography of Langstroth, Mahan was one of the inventor's business associates. In the race to get precious Italian honey bee stock, Mahan, of his own accord, went to Europe and called on Baron August von Berlepsch, from whom he procured a queen. Like Langstroth, Berlepsch was one of the world's authorities on beekeeping and some had claimed that he was the actual inventor of the movable frame. The Baron did indeed have frame hives but, as Charles Dadant pointed out in 1885, the "frame hives of Berlepsch, like the bar hives of Dzierzon, have their combs parallel to the entrance and open at the rear by doors, like cupboards."

At the Sixth Annual Pennsylvania State Agricultural Society exhibition at Pittsburgh in 1856, P.J. Mahan was awarded the second premium of \$3.00 for the second best five pounds of honey. Thomas Thornley's five pounds of honey was judged the best. Regarding both Thornley and Mahan, the committee felt compelled to insert the following note: "Bee hives were presented by Messrs. Mahan and Thornley, respectively, that seemed to demand further notice and examination than your committee had time to give, but from the hasty examination bestowed on them, are of the opinion they possessed considerable merit." Mahan's hive was likely a Langstroth. The former was a distributor by dint of having purchased the right to reproduce the patented version and, in Philadelphia and its manufactures: a handbook exhibiting the development, variety and statistics of the manufacturing industry of Philadelphia in 1857: together with sketches of remarkable manufacturies, and a list of articles now made in Philadelphia, he is listed as a manufacturer of Langstroth hives at his 720 Chestnut St. address.

Phineas, in his mid-forties, was very likely the first person to successfully import Italian bees to the United States and he kept them in Philadelphia. At the Annual

Pennsylvania State Agricultural Society exhibition at Powelton near Philadelphia on September & October of 1859, P.J. Mahan of Philadelphia was awarded the second premium of \$3 for the second best ten pounds of honey. He was awarded the first premium of \$3 for having the best five pounds of honey. But his sweetest accolade was the following: "The committee recommend [sic] a special premium of \$10 to Mr. P.J. Mahan, of Philadelphia, for two hives of pure Italian bees, said to be the first imported into the United States . . ."

In a talk on the varieties of bees, copied down by E. R. Root of *Gleanings in Bee Culture* but printed in the *American Bee Journal*, Frank Benton of Washington, DC gave the following account: "It was generally stated in the text-books that Italian bees were first introduced into the United States by Wagner and Colvin acting together, and Mahan independently. They were actually the first to land Italians on our shores, but not queens bred in Italy, nor was it from their importations that the country was stocked to any great extent with Italian bees. Their first consignments which arrived alive, came from Germany in the Fall of 1859. Mr. Mahan, to whom too little credit has been given in this connection, having charge of them. The Wagner and Colvin queens were all lost during the winter, which was near at hand when they arrived."

Dr. C. V. Riley in Vol. 31 of the *American Bee Journal* explained the vicissitudes of the early queen importations in this way: "Individual effort had, for some years previous, been directed to securing this race of bees, and in the Autumn of 1859 a few queens were landed here from Germany by Mr. P.J. Mahan, of Philadelphia, on his account, and by Samuel Wagner, of York, PA, and Richard Colvin, of Baltimore, acting together. Those imported by Messrs. Wagner and Colvin were lost during the Winter which succeeded, and those which Mr. Mahan imported do not seem to have been multiplied as rapidly as the importation made through the Department of Agriculture the following Spring."

One of the principals involved in the importation schemes, Richard Colvin of Baltimore, gave the following account in 1863 of Mahan's role: "Subsequent arrangements were made by which, in the latter part of that year [1859], we received seven living queens. At the same time, and on board the same steamer, Mr. P.J. Mahan, of Philadelphia, brought one or more queens, which were supposed to be of doubtful purity. Only two or three young queens were reared by us during the Fall and Winter, and in the following Spring we found all our imported stock had perished."

Langstroth, writing in the *American Bee Journal* on March 16<sup>th</sup> 1881, supplies greater detail about his own involvement with Mahan:

*Our queens, which came in 1859, were in charge of a German resident of Brooklyn, N. Y., who was returning home from a visit to his friends, and to whom Mr. Wagner had given very careful directions how to care for them. This person, learning that Mr. Mahan had expressed the intention of having the honor of landing, in America, the first living Italian bees, and desiring, as he told me, to secure this honor for us, communicated Mr. Mahan's intention to the captain, who, as soon as the gang-way was in place, was the first person to step ashore, proclaiming with a very loud voice,*

*With his Italian honey bee stock in tow, Mahan departed from Bremen, Germany on the ship New York and arrived in New York harbor on September 22, 1859. This North German Lloyd liner, which featured one funnel and three masts, had taken her maiden voyage the previous year following the same route. her running mate, Bremen, looked identical.*





"These are the first Italian bees ever landed on the shores of America!"

In the Spring of 1856 [this date should be 1860], Mr. S.B. Parsons, of Flushing, L.I., invited me to visit him, and advise with him as to the best way of managing his Italian bees. On my way, I called upon Mr. Mahan, who was joint owner with me of a large interest in my patent hive. He gave me a very graphic account of his visit to the apiary of Baron Von Berlepsch, from whom he obtained a queen, and supplied me with a few Italian workers for Prof. Joseph Lidy, that he might determine how the length of proboscis, in that variety, compared with that of the black bee. On arriving at Flushing, Mr. Parsons showed me five hollow logs, or "gums," placed in an old bee-shed. It was a warm, sunshiny day, and I saw only an occasional bee flying out from one of the hives. These colonies had been purchased in Italy, carried safely on the backs of mules over the Alpine passes, to Genoa, from which port they were shipped safely to New York; but by a succession of mishaps, four of them died at Flushing. The fifth contained a mere handful of bees, with their queen, which I introduced to a colony of black bees. It is hardly necessary to say that none of these hives were ever in the same vessel with Mr. Mahan."

The following notice by none other than P.J. Mahan was placed in the American Agriculturist to counteract the damaging advertisement of his rival importer, Samuel Parsons of Flushing:

*ITALIAN BEES (Apis Ligusttica.)*

To ALL AMERICAN BEE-KEEPERS - Greetings: In consequence of an unwarrantable interference by others in my legitimate business, I make the following statement: In the advertisement of the June Agriculturist, there was a "Caution" aimed directly at the purity of my Bees. I challenged the owner through the NY City papers to place his bees along side of mine in the office of the Agriculturist, conceding to him the appointment of all and as many judges as pleased him. He declined the test. Reader, did I or did I not offer fair! My bees were examined by a number of truly scientific Bee-keepers, (including M. Quimby) and other gentlemen, all of whom pronounced them pure.

At my own cost I visited Europe, selected the Bees and returned with as pure as there is in the world. Another party, at the expense of the U.S., likewise went. The Bees for the Patent Office arrived dead - of those purchased on his private account, a portion arrived safely. It now appears that I, a poor man, shall not be allowed to sell my Bees without his permission - (see June Agriculturist.) "Confer a favor by demanding to see a bill of sale from me." Mr. P. offered me \$5 for each of my orders when the money was paid. Generous, is it not? I answered not, content with my own business, but which has been materially injured since the said "Caution" was published. I may find a remedy hereafter for this most cruel and unjust attack. I now say to you: Mr. Editor, as well as to your readers - that I know my Bees to be as pure as those are in Europe. I am now hatching most beautiful Queens daily at my new isolated Apiary, (no common Bees within one mile.) and only await,

before commencing my deliveries, the certainty of their impregnation by Italian drones. Those on my books will please bear with me a short time. Those who have ordered and are willing to take the risk of pure impregnation can have the Queens, &c, immediately. Gentlemen sending 13 cents to pay postage, will receive a few Bees as a sample by mail. Queens, & c, sent by express for \$10.

Here are a few words from the gentleman who brought over from Europe a portion of Mr. Parson's Bees, and who is directly from the Alps, "where no other race is found." "This may certify that I have examined the Italian Bees of Mr. Kennedy, which he procured of Mr. P.J. Mahan. and pronounce them pure, and equal to any imported or owned by Mr. S.B. Parsons. Signed, A. BODMER, New-York, June 3, 1860." Interested parties will send for a circular containing full, convincing and satisfactory evidence of the purity of my Bees. My Bees were the first landed in America. Now, Bee-keepers here is part of my evidence—shall I or shall I not be remunerated for my great expenditure in this matter?

PHINEAS J. MAHAN, 720 Chestnut St.,  
Philadelphia,  
Apiary, South Camden, NJ

P.J. Mahan moved from Philadelphia to Houston, Texas in the early 1860s where he was well known for his skill at both beekeeping and gardening. He died there, at his home, on May 3<sup>rd</sup>, 1875. He was an honored veteran and survivor of the Texas Revolution.

In November of 1835, Mahan enlisted at New Orleans and, under the command of Captain Thomas Pearson, his company assisted with the transport, to San Antonio, of the eighteen-pounder cannon from the San Felipe, but arrived too late for the siege at the Alamo. He was with the soldiers under the command of Colonel Frank W. Johnson when they were surprised in a cold, driving rain by Centralista Forces lead by General José de Urrea at the abandoned Irish settlement at San Patricio on February 27<sup>th</sup>, 1836 at 3:30 in the morning. Johnson's encamped men were outnumbered twenty to one - 700 Mexicans opposing 35 Texans. No Mexicans died; 10 Texans were killed. Eighteen of the captured were about to be executed by the Mexican Army but a priest pleaded on their behalf and instead they were sent down to Matamoros under guard. Among these unfortunate men was a dark-eyed, black haired soldier named Phineas Jenks Mahan, whose signature was first listed on a petition to General Nicholas Bravo written from Matamoros in January of 1837, beseeching him "to consider the woes of our parents and kindred, who have long wept for us as dead, and would view our re-appearance among them as a return from the tomb." Lucky for his family and himself, as well as the future of beekeeping in the United States, Mahan was soon released, having endured the mental anguish of being ordered shot five times, as well as the physical torture of being bayoneted and lanced. By a twist of fate, in 1851, it was John Alexander Langstroth, Lorenzo's brother, who was shot during an uprising at Matamoros, Mexico. Another brother, Col. James Napoleon Langstroth, said to be a Southern sympathizer, also lived in Mexico. **BC**

Matt Redman is the proprietor of Chesapeake Soaps in Chestertown, MD, and historian focusing on L.L. Langstroth and his times.

# GLEANNINGS

OCTOBER, 2010 • ALL THE NEWS THAT FITS

## PENN STATE GETS DUTCH GOLD GOLD

Pennsylvania State University research into colony collapse disorder (CCD) gets a \$100,000 boost.

Honey distributor Dutch Gold Honey Inc. and members of the founding family, William and Kitty Gamber, of Lancaster, PA, have each contributed \$50,000 to endow a fund supporting undergraduates in the College of Ag Sciences.

First preference for the Dutch Gold Honey and William R. Gamber II Endowment in Entomology will be given to juniors and seniors involved in honeybee research.

College of Ag Sciences dean Bruce McPherson says finding solutions to the challenges facing honeybees and other pollinators will take a sustained effort over many years.

William Gamber's parents, Ralph and Luella Gamber, founded Dutch Gold Honey in the kitchen of their Lancaster home in 1946, with an investment of \$27 and three hives. William and his sisters, Nancy and Marianne, became a part of the

family business at a young age and eventually took over operations upon their parents' retirements.

William Gamber was named president of Dutch Gold Honey in 1992 and retired in 2002, but continues as chairman. Nancy Gamber Olcott is the company's current president and CEO, and Marianne Gamber serves as secretary/treasurer.

Dutch Gold Honey is the largest family-owned honey company in the U.S., annually shipping more than 50 million pounds of product worldwide.

Last month, Penn State received a \$250,000 gift to endow a graduate fellowship in entomology in the College of Agricultural Sciences.

At the request of the donor, who remained anonymous, the endowment was named the Lorenzo L. Langstroth Graduate Fellowship in Entomology, in honor of the 19th century apiarist widely considered to be the "father of American beekeeping." — Alan Harman

## TOGETHER FOR A SWEET FUTURE

*Beekeeping Industry to Gather in Galveston in January*

Plans are well underway for the "Together for a Sweet Future" 2011 North American Beekeeping Conference & Tradeshow, Jan. 4-8, in Galveston, Texas. This joint conference of the American Beekeeping Federation (ABF), the American Honey Producers Association (AHPA) and the Canadian Honey Council (CHC) promises to be the largest beekeeping event in the United States.

Conference organizers have planned a schedule to incorporate educational sessions at all levels. Also meeting are the American Association of Professional Apiculturists (AAPA), the American Bee Research Conference (ABRC), the Apiary Inspectors of America (AIA) and the National Honey Packers and Dealers Association (NHPDA).

The conference will be held at the San Luis Resort, which consists of four properties: The Galveston Con-

vention Center (where all meetings will be held); The Hilton; The San Luis Resort; and The Holiday Inn. We have secured rooms at all three hotels with rates ranging from \$89 to \$99 per night (plus tax).

The conference will begin on Tuesday evening with a complimentary welcome reception for all registered attendees. Wednesday is the Opening General Session followed by Shared Interest Group meetings.

The expanded tradeshow will open on Wednesday afternoon and remain open during conference hours until noon on Saturday. Thursday and Friday will be dedicated to general sessions, and the Serious Sideliner Symposium facilitated by Dr. Larry Connor.

Registration rates, online registration and hotel reservation information are available on the conference Web site at [www.nabeekeepingconference.com](http://www.nabeekeepingconference.com). Check the Web site often as additional details will be posted as they are made available.

## AUSTRALIA STEPS UP SEARCH FOR INVADING BEES

The Queensland government is ramping up the hunt for invading Asian honey bees.

Biosecurity Queensland has expanded the restricted area and is adding six staff to the search for the bees.

The eradication program has destroyed more than 160 nests and swarms since the first detection of the pest in Cairns in May 2007.

Primary Industries Minister Tim Mulherin says Biosecurity Queensland has more than 40 field officers scouring the restricted area, which has been extended 25km (15.6 miles) south of detections at Lake Eacham and Innisfail, 90 km (56 miles) southeast of Cairns.

"The surge in the number of troops looking for Asian honey bees is resulting in a more rapid response involving detections and the destruction of nests around the Cairns and Gordonvale areas," Mulherin says.

Mulherin says beekeepers are requested to observe the movement restrictions in the new restricted area.

"The movement of bees and beekeeping equipment may be allowed into and within the restricted area under a permit," he says. "But movement out of the area will not be approved, except under exceptional circumstances."

Those who fail to get a permit to move bees or bee equipment may be liable for a fine of up to NZ\$200,000 (US\$180,700) or up to two years in prison.

Program coordinator Charlotte Greer says Asian honey bees are a problem for a number of reasons, but especially because of their potential to carry *Varroa* mites.

"A resident population of Asian honey bees in Australia could quickly spread *Varroa* mites to the commercially-managed European honeybees," she says.

The Asian honey bees found in Cairns are of the Java strain, which is common in Asia, particularly in Indonesia and Papua New Guinea.

— Alan Harman

## CON-MAN

A conman used Rosh Hashanah, the Jewish New Year, to sell 11 tons of fake honey in Israel.

Police seized and destroyed the fake product, which had been labeled with a well known brand name, but the conman escaped.

The demand for honey surges as Rosh Hashanah approaches with Israelis seeking the product to usher in a sweet new year.

The Israeli Agriculture Ministry

and the Israel Honey Production and Marketing Board are hunting the conman who sold the fake product, made from sugar dissolved in water, to a small grocery store chain in the central Sharon region.

"Fraud happens every year, but over the last two years, there has been an upsurge," Honey Board vice president Shimshon Herlinger is quoted as saying.

— Alan Harman

Tired of waiting for the News?  
GO DIGITAL! Get the digital version of  
Bee Culture – earlier, faster and with all  
the bells & whistles of the Digital Age!  
[www.BeeCulture.com](http://www.BeeCulture.com)

## BETTER TREES FOR ISRAEL BEES

After 12 years of research Australian eucalyptus trees are coming to the rescue of Israel's bees and increasing honey production in the country.

Israel's more than 450 beekeepers – producing 3,600 tons of honey a year – looked to Australia when faced the problem of lower production.

The Jewish Australian News Service (J-Wire said this is because most of Israel's plants bloom only in the Spring.

Then, 12 years ago, the Jewish National Fund (JNF) responded to a joint initiative between the Israel Honey Board and Dan Aizikovich, a professor at Tel Aviv University by introducing a variety of species of eucalyptus trees from Australia.

Experimental trials produced species which were both suitable for Israel's harsh climate and highly productive in nectar-producing blooms.

Two years later, David Brand, chief forester and head of the forest department at KKL-JNF, Israel's exclusive forestry agency, found spe-

cies that would bloom in Israel and produce the right nectar for Israel's bees.

Thus far, more than 100,000 trees have been distributed to beekeepers in Israel and neighboring Jordan is embracing the project.

J-Wire reports the trees produce copious shade allowing beekeepers to leave their hives close to the blooming trees and avoiding the expensive necessity of transporting them to follow the pattern of Israel's native blooming plants.

"Honey production in Israel is sure to increase with the increasing availability of nectar," Brand says.

JNF chief executive Rob Schneider tells J-Wire the sharing of expertise between Australia and Israel is ongoing.

"Some years ago, JNF researchers found a natural predator to the gall wasp in Queensland, thus assisting in eliminating a threat to a certain species of eucalyptus tree that was being threatened in Israel and many other countries," he said.

— Alan Harman

## AUSTRALIA TAKES CARE OF ITS BEEKEEPERS

Tens of millions of bees are to take part in a massive exodus from northern Victoria as the Australian state government and farmers prepare to fight off the worst invasion of plague locusts in 75 years.

The bees, to be moved by early October, are to be moved before a massive insecticide spraying program begins.

The bees will be trucked from northern Victoria to the south and east.

The state Department of Primary Industries (DPI) has written to Victorian beekeepers, urging them to move hives from areas where chemical treatment of locusts is planned.

The letter warns beekeepers the chemical treatments used against locusts can be lethal for bees.

Premier John Brumby says the government is opening new bee sites on public land to protect the industry during the forecast spring locust plague.

"We recognize that apiarists are an important part of Victoria's agricultural sector and that's why we are supporting beekeepers to protect their bees," he says.

"Our government will provide alternative bee sites across the state for apiarists that could be affected by locust-spraying and during the peak of the locust plague so that they can maintain their stocks in healthy condition and produce as much honey as possible."

The Department of Sustainability and Environment has so far identi-

fied 65 sites on public land to make available to bee keepers across the state. The department is working with the apiarist industry to identify further potential temporary sites.

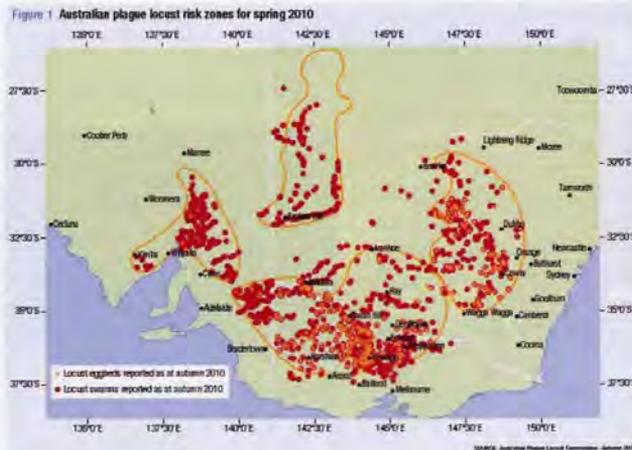
As Spring temperatures rise, the soil warms and the locusts begin to hatch, the exodus will begin.

Mallee beekeeper Ian Oakley, owner of Beekeepers Choice Honey, tells Melbourne's The Age newspaper he will be moving his 2,000 hives from Victoria's northwest to two locations as far as a 4½-hour drive from his home.

"As they start to hatch, that's our signal to get out," he says. "We can't wait until the day before they spray because we've got 10 loads of bees to move. So we've got to start moving at least seven or eight days prior to spraying."

Agriculture Minister Joe Helper says the apiarist industry, including honey production and pollination services, is valued at about A\$100 million (\$93.5 million) a year.

— Alan Harman



## THINKING OUTSIDE THE "BOX"

Visitors to the grand opening celebration of the Häagen-Dazs Honey Bee Haven will see two columns of beehives or "bee boxes" gracing the entrance to the half-acre bee friendly garden, located at the Harry H. Laidlaw Jr. Honey Bee Research Facility, University of California, Davis.

"They're fantastic," said bee breeder-geneticist Susan Cobey. "They're beyond fantastic—the art work is awesome. Not only is the quality of artwork highly impressive, the coverage and accuracy of the honey bee life cycle and activities depicted are extremely well done."

The colorfully painted bee hives are the work of the UC Davis Art/ Science Fusion Program, co-founded and co-directed by Ullman and Billick. Ullman is an entomology professor and associate dean for undergraduate academic programs at the College of Agricultural and Environmental Sciences, and Billick is a noted artist who holds a bachelor's degree in genetics and a master's degree in fine arts.

Dalrymple, a UC Davis entomology graduate student who studies with major professor Rick Karban, served as the teachers' assistant for the program's Graphics and Communications Studio section.

As part of their research, the students enrolled in the class visited the Laidlaw facility, learning about bees from Cobey and staff research associate-beekeeper Elizabeth Frost.

"From my view, watching this come together has been a highlight, as the students asked their numerous questions seeking accuracy and sought the experience of opening a colony and observing bees in their numerous duties," Cobey said. "The delight and amazement of students holding a frame of brood, watching a new bee emerge from her cell,

feed larvae or pack in pollen for first time, is also a thrill for me."

Each sculpture is stacked with seven real bee hives, so real that curious Laidlaw bees try to enter them. One column depicts life inside the hive, and the other column, life outside the hive. Among the images: a queen bee laying eggs, nurse maids caring for the brood, and foragers collecting nectar, pollen, propolis and water.

Entomology 1, "Art, Science and the World of Insects," is the centerpiece course of the UC Davis Art/ Science Fusion Program.

The half-acre bee friendly garden, open year around, includes a 6-foot-long honey bee, created by Billick and funded by Wells Fargo. Ceramic tiles on the bench below the bee were created by undergraduate students in a freshmen seminar for Davis Honors Challenge students; community members; and sixth grade students at Korematsu Elementary School.

The Laidlaw facility is located on Bee Biology Road on the western end of the campus. Once on campus, to reach the grounds, go west on Hutchinson Drive for about a mile, turn left on Hopkins Road, and then a left on Bee Biology Road.

More information on the grand opening is at <http://beebiology.ucdavis.edu/HAVEN/havenopening.html>.

— Kathy Keatley Garvey



Bee specialist Eric Mussen and Diane Ullman install the beehive columns at the entrance to the Häagen-Dazs Honey Bee Haven. (Photo by Kathy Keatley Garvey)

# OBITUARY

Frank Albert Robinson, 89, died August 18, 2010 at his home in Tallahassee. He lived in Gainesville since 1950 prior to moving to Tallahassee two years ago.

He was born in Columbus, Ohio the middle son of Kate G and Edgar W Robinson.

A graduate of Auburn University, Frank was retired from the University of Florida after thirty five years of service as a Research Professor in IFAS specializing in Apiculture. He served as Executive Secretary of the American Beekeeping Federation for many years.

He was a member of the International Bee Research Association, Florida Entomological Society, Entomological Society of America, Southern Association of the Food



and Drug Administration, and the Florida Beekeeping Association.

He is survived by his wife of 68 years Sarah S. Robinson, daughter Sarah Katherine Sparkman, son Richard E. Robinson (Janet) and many other relatives.

## BEES CHANGE THEIR INTERNAL CLOCKS

Honey bees removed from their usual roles in the hive quickly and drastically change their biological rhythms, according to a study in the Sept 15 issue of *The Journal of Neuroscience*. The changes were evident in both the bees' behavior and in their internal clocks. These findings indicate that social environment has a significant effect on the physiology and behavior of animals. In people, disturbances to the biological clock are known to cause problems for shift workers and new parents and contribute to mood disorders.

Circadian rhythm, the body's "internal clock," regulates daily functions. A few "clock genes" control many actions, including the time of sleeping, eating and drinking, temperature regulation, and hormone fluctuations. However, exactly how that clock is affected by – and affects – social interactions with other animals is unknown.

Senior author Guy Bloch, PhD, and his colleagues from The Hebrew University of Jerusalem, Israel, chose to study bees in part because of their complex social environment. One role in bee society is the "nurse": bees that are busy at all times caring for larvae. This continuous activity is different from other bees and animals, whose levels rise and fall throughout the day.

Bloch and his team thought changing the nurse bees' social environment might alter their activity levels, so they separated them from their larvae. The researchers found the bees' cellular rhythms and be-

havior completely changed, matching a more typical circadian cycle.

"Our findings show that circadian rhythms of honey bees are altered by signals from the brood that are transferred by close or direct contact," Bloch said. "This flexibility in the bees' clock is striking, given that humans and most other animals studied cannot sustain long periods of around-the-clock activity without deterioration in performance and an increase in disease."

The results suggest that the bees' internal clocks were shaped by certain social cues. Jürgen Tautz, PhD, of the Julius-Maximilians Universität Würzburg in Germany, an expert in honey bee biology who was unaffiliated with the study, said it is a wonderful example of the tightly regulated interactions between genes and behavior in a bee colony. "The presence or absence of larvae switched the genes 'on' or 'off,' which guaranteed the adaptive behavior of the bees," Tautz said.

Because bees and mammals' circadian clocks are similarly organized, the question is whether the clocks of other animals also strongly depend on their social environments. The next step is to find just how social exchanges influence gene expressions. Further research into this question may have implications for individuals who suffer from disturbances in their behavioral, sleeping, and waking cycles. Research into how these rhythms may be altered and even stabilized might identify new treatment options.

## CLIMATE CHANGE AFFECTS POLLINATION

The first long-term evidence of climate change as a possible contributor to a downward trend in pollination comes from researchers at the University of Toronto in Canada.

James Thomson, a scientist with the university's Department of Ecology and Evolutionary Biology has been sin a 17-year examination of the wild lily in the Rocky Mountains of Colorado, one of the longest-term studies of pollination ever done.

The research, which reveals a progressive decline in pollination over the years, with particularly noteworthy pollination deficits early in the season, is being published in *Philosophical Transactions of the Royal Society B: Biological Sciences*.

"Bee numbers may have declined at our research site, but we suspect a climate-driven mismatch between the times when flowers open and when bees emerge from hibernation is a more important factor," Thomson says.

son says.

Three times each year, Thomson compared the fruiting rate of unmanipulated flowers to that of flowers that are supplementally pollinated by hand.

"Early in the year, when bumble bee queens are still hibernating, the fruiting rates are especially low," he says.

"This is sobering because it suggests that pollination is vulnerable even in a relatively pristine environment that is free of pesticides and human disturbance but still subject to climate change."

Thomson began his long-term studies in the late 1980s after purchasing a remote plot of land and building a log cabin in the middle of a meadow full of glacier lilies.

His work has been supported by the U.S. National Science Foundation and the Natural Sciences and Engineering Research Council of Canada. – Alan Harman

## NEW BEE FOUND IN TORONTO

A Canadian researcher discovered a new species of bee on his way to work in downtown Toronto one morning.

York University student Jason Gibbs has completed a study of 84 species of sweat bees in Canada and 19 are new to science because they have never been identified.

Gibbs' study will help scientists track bee diversity, understand pollination biology and study the evolution of social behavior in insects.

Sweat bees can be smaller than 4 mm in length, often have metallic markings, and make up one-third to one-half of bees collected in biodiversity surveys in North America.

Complete species descriptions of the 84 metallic sweat bees in Canada are included in Gibbs' study published by the peer-reviewed journal *Zootaxa* as a single issue.

Despite their numbers and their importance as pollinators, sweat bees remain among the most challenging bees to identify to species, perhaps because they evolved so rapidly when they first appeared about 20 million years ago. Gibbs' research significantly improves upon all other available tools for the identification of these bees.

"These bees are morphologically monotonous," he says. "They are a nightmare to identify to species because their physical characteristics are so similar among species. No one has been able to identify these bees until now even though they make up so many of the bees we collect.

"It's important to identify these species, because if we don't know

what bees we have, we can't know what bees we're losing."

Gibbs examined tens of thousands of individual bees over about four years, from his own and others' collections as well as historical collections housed in museums.

To identify bees to species, he first sorted them using morphological study, then tested his assessments using DNA sequences generated at the University of Guelph.

Finally, he reexamined the bees' physical characteristics to draw even finer distinctions between the bees and identify them to species.

Among the 19 new species of sweat bee identified by Gibbs is one that he collected on his commute from downtown Toronto to York. When he arrived at his lab and examined it, he knew he had found a new species, never before identified by science but, as it turns out, quite common in Toronto and eastern Canada and the U.S.

He also identified and described 18 other species from Canada that are new to science including a cuckoo bee, which like a cuckoo bird, doesn't build a nest or collect food but it has big mandibles for fighting. This cuckoo sweat bee is believed to invade the nest of another sweat bee species to lay its eggs on the pollen and nectar collected by its host.

Gibbs received the 2010 Dissertation Prize from York for the manuscript that led to his published study. He will continue his research this Fall at Cornell and is working on similar bee studies for the Eastern U.S. and Mexico. – Alan Harman

# SAVE TIME & MONEY WITH QUALITY LIQUID FEED PRODUCTS FROM MANN LAKE

HFCS      O Sucrose      Pro Sweet

800-880-7694

www.mannlakeltd.com

An Employee Owned Company

WE KNOW BEES!



We have feed specialists that can answer all of your questions AND work with you to find the BEST choice for your current needs! We offer the highest quality liquid feed products at the most competitive price!



Find Us Now On  
Twitter and Facebook



## Display Advertisers

### Bees & Queens

Buzz's Bees.....	42
Gardner's Apiaries .....	7
Glenn Apiaries .....	42
Hardeman Apiaries .....	55
Hawaiian Queen .....	29
Koehnen, C.F. & Sons.....	29
Miksa Honey Farm.....	42
Olivarez Honey Bees Inc.....	18
Olympic Wilderness .....	13
Pendell Apiaries .....	29
Rossman Apiaries .....	4
Spell Bee Company .....	7
Strachan Apiaries .....	6
Taber's Queens .....	16
Weaver, R Apiaries.....	42
Wilbanks Apiaries.....	48
Z's Bees .....	29

### Associations/Education

American Beekeeping Federation .....	49
American Honey Producers .....	52
Australia's Honeybee News .....	16
Back Home Magazine.....	8
Beekeepers Quarterly.....	29
Beekeeping 101 .....	17
Honey Bee Democracy Book.....	18
National Honey Show.....	70

### Equipment

A&O Hummer Bee Forklift .....	2
Bee-Z-Smoker .....	1
Bucko Gloves.....	46
Cowen Mfg. ....	6
Custom Hats & Veils.....	17
Dakota Gunness .....	42
Forest Hill Woodworking .....	56
Golden Bee Products.....	51
Humble Abodes Woodenware .....	46
IMN Queen Rearing System .....	29
JZsBZs .....	51
Pierce-Mieras Uncapper .....	46
Pierco Frames .....	38
Rauchboy Smoker.....	42
Vented Beehive Cover .....	29
Woodworking Barn .....	18

### Related Items

Angel Bottles .....	29
Beezerkbelts .....	33
Branding Irons .....	42
Certified Natural Grown .....	35
Feed Bee .....	42
Global Patties .....	54
GloryBee Foods.....	6
Golden Heritage Foods .....	46
Hive Moisture Eliminator .....	52
Hogg Halfcomb Cassettes.....	48
Honeystix .....	6
Liquidation Auction .....	58

Mother Lode Products .....	4
Nozevit.....	13
Oxalic Vaporizer .....	42
Premier 1 Fencing.....	51
R. M. Farms.....	51
Sailor Plastics, Containers .....	68

### Suppliers

Ashley Bee Supply .....	52
B&B Honey Farm.....	55
Beeline Apiaries .....	46
BetterBee.....	38, Inside Back
Blue Sky Bee Supplies .....	50, 64
Brushy Mountain .....	52, Ins. Front
Dadant .....	30
Honey Bee Container .....	25
Kelley, Walter .....	50
Mann Lake Supply .....	1, 8, 14, 22
.....	71, Back Cover
Maxant Industries .....	22
Miller Bee Supply .....	58
New England Farms.....	29
Queen Right Colonies .....	56
Root Publications.....	5
Ross Rounds .....	51
Rossman Apiaries .....	4
Ruhl Bee Supply .....	16
Sherriff, B.J. ....	33
Simpson's Bee Supply.....	42
Small Cell 4.9 .....	56

tell people that my beekeeping business is “way more than a hobby, but far short of a livelihood.” I love to keep bees, and to make money from them, but I still need a paycheck to survive.

I primarily sell my honey retail, that is, mainly to people I know. It keeps me busy. I’m a way better salesman than I am a beekeeper.

I sell pollen, too, and I’ve only sent two people to the hospital with allergic reactions. So I decided that retail pollen sales are a liability risk that I can’t afford. I now deal pretty much exclusively with a wholesaler.

Occasionally I do get a call from someone with allergies, who really wants to buy my pollen. So I make exceptions. I put a note in the bag with the pollen. I warn them to try the tiniest sample on the tip of the tongue, before consuming any significant quantity of this stuff.

My handwritten note might not be of much use if I ever got sued, but this is the way I do it. If folks insist, I’ll sell to them.

The other day a woman called and said she wanted 10 pounds for her brother in Hawaii. She said she’d purchased pollen from me before, even that she’d been to my house. I have no recollection of this. But then at my age, there are a lot of things I don’t remember.

It struck me that there are all kinds of restrictions on plant and animal importations into Hawaii, and for good reason. Until recently the islands were a safe haven from *Varroa* mites.

I never mentioned this to my customer. As long as she didn’t kill herself with it, I didn’t consider what this woman did with my pollen to be any of my business. Plus this pollen had been in the freezer for at least a week. If there were a bug in there, I guarantee it would be a dead one. I can always use an extra hundred bucks, so I didn’t worry about it.

I know beekeepers who aren’t afraid to charge a lot for their honey, and maybe that works for them. I guess a \$20 quart in a fancy jar makes an affordable gift. But I sell mainly to repeat customers who eat my honey themselves. I charge a little more than the grocery store, and folks still think my honey is a great deal. My market would probably support a modest price increase, but in a recession, I just can’t do it. Nobody around here’s flush like they were a couple of years ago.

Take the girls down at the bank. They get together and call me. They receive a discount for an eight or 10 quart order, and the money’s waiting for me in a little envelope when I make my delivery. They’re mainly tellers, so they don’t make any addition mistakes. But my guess is that they don’t make a lot of money. They have families. Price matters.

My honey reps get my best price, the one I give to my commercial outlet customers. The reps buy by the case and sell to people at work. One of the hospital paramedics sells an unbelievable quantity of honey. He’s the “honey guy” at work, and sometimes it’s all I can do to keep up.

I sell eight-ounce glass hex jars to a few high-end outlets in Aspen, but they don’t exactly fly off the shelf, and sometimes they granulate there. I take them back when they do. This is a big pain. I like to move product. I like it when the phone rings, and the caller says she needs a case of quarts.

The other day I ran into a customer. He’s no Spring chicken. I work on Aspen Mountain, and we rode the gondola together. He was going for a hike on Richmond Ridge, and he needed a quart of honey.

He and his wife are old-time Aspenites. She grew up the hottest ski racer in town and for many years worked on the ski patrol. Now her knees are shot. She inherited the house on Shady Lane. He has Parkinson’s, and some days are better than others.

He said he’d just finished a book – *Fruitless Fall, The Collapse of the Honey Bee and the Coming Agricultural Crisis*, by Rowan Jacobsen. He said it came from a “Buddhist perspective.” He said they had it at the library, and he thought I might enjoy it.

A couple of days later, I called to get his mailing address. I had a clipping about a peace-activist priest with Parkinson’s who nevertheless carried on his work for many years. I wanted to send him the article.

At the end of the conversation, I inquired about his feisty and charismatic wife. I know her better than I know him.

He said that the day before she’d been diagnosed with esophageal cancer. She was outside on the porch talking to a friend. “We don’t know what we’re going to do,” he said. “But it’s time to start thinking about crossing over to the other side.”

“We’re all on that journey,” I said.

When I sent them a card, I got one back right away – from both of them. She sounded chipper. He wrote, “Worry is simply a misuse of the imagination.”

You have to admire courage, and a cool head. Maybe I should read that book.

**Ed Colby**

**Read The Book**

**BOTTOM BOARD**