

WWW.BEECULTURE.COM

Nov 2007
Bee

Culture



INSIDE IN NOVEMBER

NATIONAL BEE CONFERENCE

ABC WINS GOLD

EVA CRANE

NEW PRODUCTS

ANNUAL CROP REPORT

GLEANINGS

ROOT
PUBLICATIONS

\$4.99



7 35940 20163 9

Bee Culture Wins At Apimondia



Fall asters make Winter honey, which makes Spring bees. photo by Bill Mondjack



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

Malcolm T. Sanford • Steve Sheppard

Larry Connor • Connie Krochmal

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), November 2007, Volume 135, Issue 11, is published monthly by The A.I. Root Co., 623 W. Liberty Street, Medina, OH 44256. Periodicals Postage Paid at Medina, OH and additional mailing offices.

Contact Information

V800.289.7668 • V330.725.6677 • F330.725.5624 • www.BeeCulture.com
email: info@BeeCulture.com

Advertising

For information on advertising contact Dawn Feagan at 800.289.7668, Ext. 3220

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

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© 2007 by The A.I. Root Co.
All rights reserved.

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

NOVEMBER 2007 VOLUME 135 NUMBER 11

FEATURES

NATIONAL BEE CONFERENCE 5

Top speakers will be on the program of the first ever joint meeting of the American Beekeeping Federation and the American Honey Producers Association.

ONLY THE STRONG SURVIVE 23

New Mexico's Southwest Survivor Queen Bee Project.

Melanie Kirby

BEEPOCALYPSE NOW? 27

Is there a problem here?

Jim Fischer

STARTING OUT 30

First Flights
The Next Generation

Karen Edmundson Bean
Lonnie Funderburg

BEEES & KANGAROOS 33

Apimondia 2007

Ann Harman

WHAT I LEARNED AT EAS 37

Being a beekeeper doesn't mean you have taken a vow of poverty.

Nancy Tozier Sieling

VISITING A POLISH QUEEN & MUSEUM BUSINESS 39

There's even a restaurant at this unique museum and apiary.

Jim Metcalf

WHAT WE DO AND WHY 42

Research is complicated and expensive. Here's why.

Jennifer Berry

EVA CRANE 58

Beekeeping loses a great lady.

Bee Culture - The Magazine of American Beekeeping

is



on



Recycled Paper



MAILBOX	7
LOCAL ADS <i>See what's selling in your area.</i>	8
THE INNER COVER <i>How bees make good decisions.</i>	10
Kim Flottum	
HONEY MARKET REPORT <i>Annual crop report – it's not good!</i>	12
NEW PRODUCTS <i>The Happykeeper Bottom Board; City of Bees DVD; Kendal The Baker Bee book and Elemental Genetics and Breeding For The Honey Bee book.</i>	13
RESEARCH REVIEWED <i>Will the causative agent please stand up?</i>	15
Steve Sheppard	
TWO DECADES OF VARROA, PART II <i>Beekeeping in the U.S. has a brighter future than many might have thought a few short years ago.</i>	19
Malcolm Sanford	
EXTRACTING HONEY, PART I <i>Handling full supers and uncapping frames.</i>	45
James E. Tew	
NAKED COMBS EMPTY SPACES <i>The story ends. Death in the colony.</i>	49
Larry Connor	
THE HONEY GARDEN <i>Pears are considered the aristocrats of the home orchard.</i>	52
Connie Krochmal and Ann Harman	
DO YOU KNOW? <i>What do you know about basic honey bee biology?</i>	55
Clarence Collison	
GLEANINGS <i>All the news that fits.</i>	57
CLASSIFIED ADS <i>Buying and selling.</i>	61
BOTTOM BOARD <i>Elvis</i>	64
Ed Colby	

Speakers from around the world will be on the program at the National Beekeeping Conference to bring the latest information on every subject of interest to beekeepers.

The Conference will be in Sacramento, CA, January 8-12. It will feature the joint conventions of the American Honey Producers Association and the American Beekeeping Federation along with the annual meetings of American Bee Research Conference, the American Association of Professional Apiculturists, the Apiary Inspectors of America, and the National Honey Packers and Dealers Association.

Denis Anderson from Australia and Mariano Higes from Spain are two featured speakers. There will be a wide array of speakers from U.S. and Canada, as well as panels of knowledgeable beekeepers.

Topics include colony collapse disorder, Australian package bee imports, the new "super" Nosema, almond pollination and the mandarin orange controversy, and developments with the honey market.

In addition to those topics planned for the general session program, there will be four sessions on Wednesday afternoon to allow groups of beekeepers to dig into topics particular to their interests. There will be Special Interest Groups for package bee and queen breeders, for honey producer-packers, for hobbyists and sideliners, and for commercial beekeepers.

In a parallel program, Friday and Saturday will see a reprise of the Serious Sideliner Symposium that has been at recent ABF conventions. Under the leadership of Larry Connor, the Symposium will focus on topics directly affecting smaller beekeepers, including those considering making the jump to commercial.

The Symposium will share the Interactive Workshops on Saturday morning with the full convention. Tentative Workshops include Nosema – Testing and Treatments, Estate Planning, Coping with CCD, Foreign Employment, Raising Queens in Northern Climates without Chemicals, Apitherapy, Beeswax for Fun and Profit, a Look at Beekeeping around the World, and *Varroa* – the Silver Bullet. Another Workshop will be on Honey and Health, as a mini-version of Tuesday's symposium.

On Thursday and Friday afternoons, the Conference program will take an early recess to make time for optional tours in the area. The Thursday tour will be to the Univ. of CA in Davis. After campus tours, including a visit to the Harry H. Laidlaw, Jr. Honey Bee Research Facility, the group will have dinner on campus with wine- and beer-tasting. The tour will cost \$50 with advance registration. The Friday tour will be to the CA operation of Mann Lake Ltd., followed by a visit to the Hedrick Ag History Center, including dinner. The advance cost will be \$20.

The Conference opens Tuesday evening with a reception hosted by CA beekeepers and concludes Saturday evening with the ABF and AHPA banquets.

Watch for details on AHPA and ABF websites: www.americanhoneyproducers.org and www.abfnet.org. Ask to be on the pre-conference mailing list by contacting ABF at 912-427-4233 or email: info@abfnet.org or email: brownhoneyfarms@hotmail.com.

To reserve a hotel room for the Conference, call the Sacramento Doubletree Hotel at 916-929-8855 or 800-222-8733. The group rate is \$95 for up to four persons per room.

Use Local Food Sources

In reference to Karen Miller's "In Defense Of Cooking With Honey" *Bee Culture*, September 2007, I agree with her recommendations, particularly with utilizing locally grown food sources when available.

With a midwestern farm background dating back to when we utilized our farm grown resources to a large degree, I must concur with her philosophy though it may be tinged with a bit of nostalgia. A year-around healthy diet usually includes more than midwestern seasonal produce as any well stocked grocery supermarket in the central U.S. will show.

Let's be realistic. Substitute "West," "South," or "East" for Karen's "Midwest" and you get the same logic about the benefits of utilizing local agricultural produce. Modern food technology and distribution facilities gives us all the benefits not only of our own regional products but most of what is available in other, perhaps more diverse geographical areas than our own.

Larry Goltz
Redding, CA

Problems With Almonds

When is someone going to stand-up and say that almond pollination is causing too many problems for the rest of the beekeeping nation? There are too many bees in too small an area being spread across the rest of the country after almond pollination! I have already cut way back on my number of hives and I'm thinking it's not worth it anymore.

Bob Martin
Superior, WI

Are We Irrelevant?

Why are beekeepers irrelevant?
Could beekeepers do better?
Could beekeepers possibly do worse?

For 20 years I offered to gate-keep a national scale-hive project during the Summer. It was a primitive model of social networking. No one ever participated.

Beekeepers are irrelevant because we don't network. We have our little networks of our little friends. We don't cast our curios-

ity, or our solutions among the broader community. To do so would give beekeepers a chance to survive, and God Forbid, a couple of them might be someone I Don't Like. Zero-Sum Game is in our DNA. Thus, we are irrelevant.

We could be less irrelevant. In Sacramento, both 'national groups' will be meeting. A number of other groups will also attend. The other groups network socially; a more open exchange of information occurs. Beekeepers willfully resist such notions. A good friend once said, 'The problem with beekeepers isn't the internet, it's the phone-jack.'

'Doctors, Salesmen, Executives Turn to New Sites to Consult, Commiserate With Peers; Weeding out Imposters' reads the text of a recent piece by Jessica Vascellaro in the *Wall Street Journal* (8.28.07 p.D1).

We could do the same.
We won't.

See you in Sacramento, unless I Don't Like You.

John Miller
Gackle, ND

Beekeeping at 90+

Several years ago I had decided that at my age enough beekeeping was enough. But the bees would not let me quit. In August a swarm entered my garage when the door had been left open and the swarm settled in a stack of old hive bod-

PACIFIC NW BRED "SMART" QUEENS

**WILD CAUCASIAN/SMR/RUSSIAN
SURVIVOR STOCK**

Hardy. Work@Cooler Temperatures

HYGIENIC • MITE RESISTANT

**Abundant Drones
Isolated Mating Yards**

OLYMPIC WILDERNESS APIARY

Available Summer and Fall Only

866.204.3426 (toll free)

harbees@olympen.com • www.owa.cc



Bee Culture Information



ies. The swarm charged me with the messy job of sorting out those hive bodies with bees and brood in them and those without and moving those with bees and brood out of the garage.

One problem at 90 is the weight of full depth hive bodies. Rather than handle brood chambers and honey supers weighing up to 100 pounds each I decided that for brood chambers I would use two medium sized supers instead of one full depth hive body. The supers, half the size of normal brood chambers, would also give me flexibility in management of the production of brood, shifting the supers for swarm control. Moreover I could then standardize my whole operation, brood rearing and storage of honey, other than collecting comb honey which requires a shallow box. The suggestion for using medium sized boxes for both brood rearing and honey storage came from a comment in the Brushy Mountain Bee Farm Catalog.

Years back I had decided to go for comb honey production exclusively, mainly because of the beauty of comb honey but also because honey comb supers are lighter than those for the production of liquid honey. However, to produce comb honey exclusively is not realistic. Extracting honey also has to be part of any beekeeping operation.

Although I have kept bees since high schools days, the early 1930s, never have I had more than 10 hives. Now I have just two.

A must at 90 is a helper, in my case my care giver, a young (47) married woman. She has become fond of bees, even to the point of lifting the cover of a hive whenever



just to see what the bees are doing. Four hands are much more efficient than two hands in handling smoker, hive tool, bee frames, escape boards, etc. all at the same time.

This year upper New York State has been a remarkable year for honey production, at least where I keep bees. I have over 100 rounds of comb honey from my two hives, one hive started from three pounds of bees and a queen in May, the other a year old. And the Fall honey flow has yet to start.

For Winter I will leave each hive with one medium depth super as a food chamber. I may or may not treat for *Varroa* mites. I hope that my bees survive the Winter but if they do not I can easily start over again with package bees and a queen next Spring.

I do not produce honey to sell. I hate selling; I love producing. I do have to sell or give away my stores of honey eventually to get rid of them, but selling is not my objective in keeping bees.

Architecturally, aesthetically, comb honey is nature's most perfect organic product. The building material is so delicate yet so strong that the products of man's labor in building and in the use of building materials can hardly compete. One reason why I still keep bees.

John J. McKelvey, Jr.
Richfield Springs, NY

Working Together

I will start by saying we read

your magazine every month and for my husband he is like a kid in a toy store when it comes time for your magazine to come in the mail. Plus like showing off a new toy he shows everyone the cartoons as well as important info in your magazine.

What we would like to know from other beekeepers is there success using coconut oil in the beehives?

If as small beekeepers we don't help each other and tell our successes then we all would be hurting in some way. *Bee Culture* with its letters from everyone has helped a lot of small beekeepers. So please let me know what is going on with this coconut oil in the hive.

Again, *Bee Culture* thank you for letting me have all those free hours while my husband is reading your magazine. But this is a good thing I know more than most wives on beekeeping and don't mind helping when needed.

Diane Feltner
Campbellsville, KY
beefeltner@yahoo.com

Editor's Note: Our coconut oil letter has generated considerable interest. The only information we have is the original comment, and the address of the author. I include it here, and will let everybody else know when we know more. For coconut oil information contact J. Wickey, 5496 Prairie Branch Road, Mansfield, MO 65704.

Come Buzz By...

the **Beez Neez**
apiary supply

403A Maple Ave.
Snohomish, WA 98290
(360) 568-2191
www.beezneezapiary.com

Questions??? We can help!

Bees Are Not A Hobby

In regards to the "Passing of the Hobby Beekeeper" in September's issue, I wholeheartedly agree with James Tew in dropping the "Hobby" in beekeeping. Beekeeping is by no means a hobby, it's not fun getting stung, not fun lifting full hive bodies or supers, not fun finding a mass of dead bees or none at all. It is, however, a passion of the natural world, a great responsibility, and a rewarding stewardship. You just cannot shove bees in the closet or under the bed like some people do with their hobbies.

I would be more than happy to drop the "Hobby" and consider myself a Part-time beekeeper, with nine hives and growing, who knows, maybe someday, I will reach Full-time. Even if beekeeping did not pay well, I would still enjoy it, but just a few hives please. My lower back won't last forever.

To be honest, I am having a little fun. Good riddance "Hobby."
Robert Hevesi
Wenonah, NJ

More Bee Jewelry

In the September issue we had an article titled *Where The Bees Are* featuring bee pins. We could not include all of the photos, but here is a list of websites to visit and find more beautiful bee jewelry of all kinds. Enjoy.

www.absolutelyvintage.net
www.rubylane.com/shops/sarastreasure
www.deja-voodoo.com
www.jewelmuseum.com
www.christmastreepins.com

Reprints

First, I want to tell you that I enjoy *Bee Culture* and look forward to each issue.

**FOR SALE • LOCAL ADS • FOR SALE
BUY LOCAL • SAVE MORE • ADVERTISE LOCAL**

<p>WISCONSIN Lapp's Bee Supply Center Reeseville, WI 53579 800.321.1960 Free Catalog Open M-F 8a.m. - 4:30 p.m.</p>	<p>MICHIGAN Blossomland Bee Supply Full Line of Bkpg Sup • Classes Call 269.695.2310 www.blossomland.com</p>	<p>OHIO Package Bees In Ohio Waldo Ohio Apiaries Box 122, Kilbourne 43032 740.524.6241</p>	<p>To Place A Local Ad Call Dawn at 800.289.7668, Ext. 3220</p>
--	---	---	---

Second, I want to tell you how to run your business.

I live in Crugers, NY which is a small hamlet (aren't all hamlets small) on the Hudson River half way between Croton-On-Hudson and Peekskill - if you wish to look at a map. I run five Langs and a top bar hive at home and manage two apiaries on an estate in North Salem in Westchester County, NY - 12 hives in total.

I am not in the publishing business so have no idea as to the business value of my suggestion that you make some of the articles in *Bee Culture* available as reprints.

A good example is Larry Connor's article *Dear Neighbor*. I have educated my neighbors about the honey bee but Larry's article is a useful article for educating the broader community. I plan to copy it and send it to the Town Super-

visor and members of the Town Board. Rather than sending copies, a reprint would be more impressive and perhaps carry more authority.

Years ago I ordered 100 copies of *Bee Careful* . . . and have handed many of them out at neighbors' picnics/barbeques when the subject of beekeeping comes up as inevitably it does. I always bring a jar of honey and a sample of goat cheese to the gathering. Local honey and goat cheese go well together.

Just a thought.

Jim Grefig
Cruger, NY

Editor's Note: And a good thought it is. Though not a reprint. Larry's article is available for free on our web page www.BeeCulture.com, and we encourage everyone to use it.



BEE'S FOREVER PLASTICS

Super with Lifting Cleat  **No Dry Rot! No Assembly! No Maintenance!**  Super with Lifting Cleat

FORGET THE LABOR, PAINT AND NAILS


- ♦ Lighter than Wood
- ♦ Molded from Food-Grade Polypropylene Containing U.V. inhibitors
- ♦ Interchanges with Standard wooden equipment
- ♦ White is the standard color

Available with or without Lifting Cleat

Distributors in: Woodland, CA; Bonners, ID; Danville, OH

For more information contact us at:
(530) 701-3505 Fax: (530) 662-2501
E-mail: beesrus@2xtreme.net



 "An Association Strictly For Beekeepers"

THE AMERICAN HONEY PRODUCERS ASSOCIATION

The AHPA is the **only** national beekeeping organization that reserves its voting privileges for beekeepers. All segments of the honey industry are welcome, but only our beekeepers have a vote in the organization.

Join and Help us:

- ★ Promote U.S. Honey
- ★ Promote Bee Research
- ★ Stop Pesticide Abuse Near Bees
- ★ Educate Congress of our Beekeeping Needs
- ★ Keep the Beekeeping Industry Updated with our *Honey Producer* Publication

Dues: Hobbyist - \$50; Sideline - \$150; Commercial - \$300

Make checks payable to: AHPA
Ellen Smoot, P.O. Box 158
Power, MT 59468

BuzzyBee™ THE IDEAL HONEY CONTAINER

1 lb. (16 oz.) Honey Bee Container

Bulk Pack 200 per case

1-5 cases... \$409.20 ... \$90.20... with caps... \$449.20 ... \$106.20
*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

November Special

Check out our website at www.thehoneybeecontainer.com
E-mail - info@thehoneybeecontainer.com

BuzzyBee™ comes to life!!

Four sided "Decorated" two-color
16 oz. Honey Bee Containers
1-5 cases ... \$190.20 ... with caps ... \$206.20
CALL TODAY!

The Honey Bee Container, Inc.
149 Patterson Road
Roebuck, SC 29376
(864) 476-6229



INNER COVER

Dr. Tom Seeley from Cornell University visited Ohio recently as a speaker at the first Western Reserve Beekeeper's meeting held at Hiram College.

He talked about honey bees of course, and swarming, house hunting and group decision making. He started by asking how a swarm chooses where to go once they leave the hive and form that first cluster, you know, over there on that apple tree branch.

To find out he put bees on an island with no trees, houses or anything that would work as a nest site. Then he put up his own nest sites that he controlled for volume, size of entrance, height off the ground and other variables. Then he made up a swarm and watched as scouts eventually discovered each of the nest sites, measured their value, communicated this to others back at the swarm, and eventually saw the swarm leave and set up residence in what was almost always the best nest site of the bunch.

But first, an interesting story on how this began. Martin Lindauer, an associate of von Frisch's was watching swarm clusters in Berlin, Germany right after WWII. He noticed returning scouts were covered with red dust and some with black dust. He picked up one with black dust and she smelled of burned soot. And the red – brick dust. The bees were finding cavities in burned and destroyed buildings somewhere in the city. He'd also observed that initially several scouts were returning to the cluster and dancing on the surface for many different locations, but gradually the number of locations dwindled and the number of dances pointing in the same direction increased. Eventually, all the dances were pointing the same way and off went the swarm. He concluded that the scouts reached a consensus amongst themselves, then 'somehow' convinced the swarm to leave. But there his research, or at least the story, ends.

Tom and company kicked this up a notch by video taping, marking and counting every bee in the swarm he set up.

Let's go back to that cluster. Tom found that a scout bee doesn't actually compare various sites since she only goes to *one* site. Once she visits that single site she returns, expresses her opinion by the vigor of her dance, then retires from the scouting life. Those who are swayed by her dance visit this site, return, dance (or not) and retire. The more vigorous the dance the more recruits.

There's a metric that the returning scouts produce that tells another part of the story. Recall that a scout visiting a site has only that site to 'talk' about, and she is either wildly enthusiastic about it, less so, or not at all. Enthusiasm is measured by counting the number of waggle runs she does, *and* how long she does them, to convince other scouts to visit the site.

The more enthusiastic the dance, the more scouts that are convinced to visit; and it's the *number* that visit that's important. By reading the bees' story Tom could tell which site they were dancing for, thus how 'good,' or 'bad,' the site was, as judged by the bees. Moreover, he could tell how well a particular site stood over time by counting the number of scouts that visited the site and their enthusiasm when they returned. For a site not chosen, Tom showed these numbers: waggle runs after a visit to the site of two possible sites by different bees – 87 – 60 – 56 – 16 – 0.

Depending on cluster size, when between 10 and 20 scout bees are at a site *simultaneously* they reach a 'quorum' for that site. That is they make a group decision (and remember, they've only been there this one time). They then return to the cluster and begin rousing the resting bees, encouraging them to get going, which takes a bit of doing.

Mostly, the resting bees are too cool to fly and need to warm up. To get

them started the scouts that were at the chosen site dash madly around the cluster, stopping on occasion and 'piping.' That's kind of a high-pitched vibratory buzz that's *only* used for this occasion. When the bees are warm it's up, up and away and the new home gets occupied.

So what happened, really? Relative to group decision making, 1) the best decisions are made *when the group promotes a diversity of ideas*, drawing on the knowledge of the members of the group.

2) Successful decision making avoids the tendency to conform, that is, *there is competition among options*. Think of a large voting body trying to decide something and the 'Boss,' expresses an opinion, then asks for a show of hands, or he offers a secret ballot. Which will be the least diverse, do you suppose?

3) A decision making group comes to a decision that optimizes a balance of speed and accuracy. Bees almost always pick the best nest site, just ask them!

There's much more to Dr. Tom's work than there's room to explore here, but he's promised more information on decision making in the future. I suggest you decide to read it when it's available. It'll be worth the wait.

How Bees Make Good Decisions

NOVEMBER - REGIONAL HONEY PRICE REPORT



Harvest 2007 Edition

We measured the 2007 crop this month. Ouch. It's less than last year's crop, and that was the smallest crop on record. We also measured individual harvests for the Spring, Summer and Fall crops for each region, giving them a ranking. Plus, we looked at the percent of reporters from each region that harvested that crop (% on the chart). The differences between regions is

interesting, take a look at 3,6,9 and 11 for interesting regional patterns.

We also measured overall production for all reporters across all regions (average). Our per/colony average came out to be 55.9 lbs./colony. Since we don't have the USDA colony count we'll use last year's count (though we suspect that will

be high) of 239,200,000 colonies. This works out to a 133,712,800 lb. crop. That's 14% off last year's crop which was the worst ever, and 47% of the U.S. average of 250 million lbs. Last year we predicted a 62 lb./colony average, and the USDA came in at 64.7, so we are reasonably confident in our prediction.

Explaining The Numbers

R = Crop Rating
% = Reporters harvesting in that region
2.7 = Crop rating
67 = % of Reporters who harvested for

R	%
2.7	67

R = Crop rating: 1 = Very good; 2 = Pretty good; 3 = Average; 4 = Not too bad; 5 = Very bad; A = Average																										
Crop Harvest	1		2		3		4		5		6		7		8		9		10		11		12		All Regions	
	R	%	R	%	R	%	R	%	R	%	R	%	R	%	R	%	R	%	R	%	R	%	R	%	A	%
Spring	1	25	2.3	60	2	33	3.5	36	4	100	3.2	92	4.5	50	5	20	3.3	75	5	100	3.8	29	2.7	67	3.4	55.6
Summer	2.7	75	3	66	2.3	75	2.8	86	3.5	66	3.3	83	4.1	78	3.4	100	4	100	4.5	100	3.1	53	3.3	60	3.3	78.5
Fall	4.5	75	3	75	3	33	3.8	42	4	66	4.3	38	4.2	75	4	40	0	0	5	100	2.7	69	2.3	38	3.4	54.1
Avg. #/col	50.2		73.8		32		45.1		87.5		67.1		62.3		60.6		43.2		26		50.9		73.9		55.9	
Overall Rating	3.3		4		3		4.3		4		3.3		4.2		3.4		4		5		2.7		2.8		3.7	

REPORTING REGIONS													SUMMARY		History	
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Year
EXTRACTED HONEY PRICES SOLD BULK TO PACKERS OR PROCESSORS																
55 Gal. Drum, Light	1.05	1.35	1.00	1.38	0.85	1.15	1.10	1.26	1.26	1.08	1.07	1.17	0.85-1.38	1.14	1.15	1.03
55 Gal. Drum, Ambr	1.00	1.00	0.92	1.15	0.74	0.91	1.02	1.00	1.00	1.00	0.96	1.15	0.74-1.15	0.99	1.02	1.02
60# Light (retail)	110.00	122.00	105.00	107.17	110.00	90.15	107.67	105.16	100.00	108.19	118.60	135.00	90.15-135.00	109.91	114.38	110.42
60# Amber (retail)	110.00	113.33	102.50	104.33	110.00	103.05	102.17	107.50	91.00	110.22	107.00	127.98	91.00-127.98	107.42	112.74	109.61
WHOLESALE PRICES SOLD TO STORES OR DISTRIBUTORS IN CASE LOTS																
1/2# 24/case	49.56	60.98	40.80	41.90	62.08	43.25	42.91	62.08	62.08	36.50	39.60	92.95	36.50-92.95	52.89	59.11	43.70
1# 24/case	64.35	68.53	67.20	61.40	78.00	69.70	71.55	60.72	55.18	78.01	73.20	95.00	55.18-95.00	70.24	70.16	68.90
2# 12/case	59.04	63.72	61.80	54.87	75.00	52.93	63.01	75.00	49.50	57.84	52.80	76.15	49.50-76.15	61.81	65.08	57.25
12.oz. Plas. 24/cs	57.48	62.10	49.80	59.59	48.00	58.80	57.34	49.56	43.75	47.28	50.80	62.00	43.75-62.10	53.88	58.12	54.53
5# 6/case	68.50	70.99	71.25	61.29	63.32	54.00	74.39	70.00	57.00	61.86	55.50	85.75	54.00-85.75	66.15	67.00	65.37
Quarts 12/case	87.91	100.35	112.20	84.50	78.00	73.85	87.09	79.08	87.91	117.55	79.20	114.00	73.85-117.55	91.80	97.83	90.33
Pints 12/case	76.19	49.95	66.00	75.99	58.00	44.00	66.06	44.49	38.65	64.68	46.20	63.00	38.65-76.19	57.77	56.00	52.58
RETAIL SHELF PRICES																
1/2#	2.88	2.70	2.22	3.01	2.19	2.75	2.76	2.23	2.79	2.21	2.23	3.95	2.19-3.95	2.66	2.72	2.60
12 oz. Plastic	3.25	3.59	3.13	3.37	3.83	3.36	3.12	3.55	3.15	2.79	3.11	4.29	2.79-4.29	3.38	3.39	3.36
1# Glass/Plastic	4.68	4.21	3.93	4.09	4.20	4.05	3.92	4.25	4.09	4.28	3.92	5.75	3.92-5.75	4.28	4.25	4.02
2# Glass/Plastic	7.58	7.38	6.25	6.32	6.40	6.55	6.45	7.91	6.75	6.47	6.34	9.90	6.25-9.90	7.02	7.22	6.71
Pint	6.39	7.38	6.50	5.60	4.87	5.16	6.63	5.40	5.13	8.10	4.79	7.55	4.79-8.10	6.12	6.09	5.89
Quart	16.75	8.90	11.00	9.19	8.25	8.49	9.61	9.63	10.25	16.50	9.01	13.88	8.25-16.75	10.95	10.60	9.34
5# Glass/Plastic	14.75	14.36	15.65	13.96	18.00	14.00	17.30	17.00	13.85	12.83	18.85	21.50	12.83-21.50	16.00	15.68	14.91
1# Cream	4.75	5.75	4.89	4.84	6.30	4.10	6.09	4.62	5.95	5.78	5.91	6.20	4.10-6.30	5.43	5.22	5.05
1# Cut Comb	5.00	4.75	5.19	5.07	7.24	4.70	6.60	5.33	7.24	8.00	6.95	6.98	4.70-8.00	6.09	6.50	5.28
Ross Round	6.13	3.98	4.97	4.56	6.13	3.75	6.12	4.75	6.13	6.13	5.90	8.20	3.75-8.20	5.56	5.23	4.50
Wholesale Wax (Lt)	2.33	2.45	2.00	2.27	2.61	2.53	2.03	2.83	2.15	2.61	2.36	2.28	2.00-2.83	2.37	2.69	2.62
Wholesale Wax (Dk)	2.00	2.07	2.00	2.26	2.15	2.55	2.09	2.00	2.00	2.53	2.51	2.10	2.00-2.55	2.19	1.65	2.19
Pollination Fee/Col.	60.00	79.00	56.00	42.50	42.00	43.67	48.00	60.00	128.75	80.69	26.00	96.25	26.00-128.75	63.57	69.09	53.94

Look What's New!



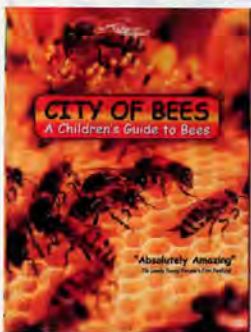
The Happykeeper Bottom Board has been redesigned and improved. The tube support system has been strengthened and the tubes are now enclosed. Compared to screened bottom boards, according to the manufacturer, there is more brood in early Spring (when screens are left open), thus a larger Spring honey crop. There are fewer *Varroa* and no need to clean the bottom board each year either. \$21.50 + shipping and handling. 866.371.6006; www.HappyKeeperusa.com

Choices Media announces the release of a new version of **City of Bees: A Children's Guide to Bees**. The film offers children of all ages a unique yet informative inside look at the complex life of a beehive.

Recently named Editor's Choice by *Video Librarian* and "Video of the Week" by *School Library Journal*, *City of Bees* follows six-year-old Oliver and his friends as they join a beekeeper as he cares for his hives over the course of a year.

Remarkable footage of bees inside the hive, shows the birth of new bees, the intricate dances bees perform to help other bees find flowers, and how bees fly and navigate. The film includes learning activities that allow children to gain a better understanding of the bees' life.

City of Bees is recommended for grades K-6 and is \$24.95 ordered by visiting www.choicesvideo.net.



Kendal The Baker Bee. John A. Hartigan, Published by James A. Rock & Company, Rockville, MD. ISBN 9781596637887. 2007. Soft cover. 146 pages.

From The Author: *Kendal The Baker Bee* is a story filled with competition and whimsical interplay among drones, queen bees, worker bees a beekeeping family. Today as the public learns more of Colony Collapse Disorder (CCD), the plight of honey bees and beekeepers are taking center stage in newspapers and on TV.

This book is a fast paced adventure for all ages, nine to 90. It offers for children, a girls' basket of reasons to take pride, for boys a channel of discoveries and for adults a captivating fantasy. Visit www.johnhartigan.com which sheds light on the story line, on bee bits and on the author. The book provides many benefits:

As a special forward celebrates beekeepers' profession.

For educational content and stressing values.

As an inexpensive gift for family, friends and customers.

As a business marketing and promotional tool.

From Our 11-Year-Old Katie: I loved reading *Kendal The Baker Bee*. It was one of my most favorite books I've ever read. I found the first few pages about bees and beekeepers (titled "Celebrating Beekeepers") very interesting and filled with facts.

My favorite part of the book was the end. It was emotional and wonderful.

Kendal The Baker Bee teaches many lessons but I think the most important lesson is a life lesson that giving is better than receiving.

I enjoyed this book and I think it is a fun filled fantasy adventure for all ages!!
- Katie Newcombe



Elemental Genetics and Breeding For The Honey Bee. Ernesto Guzman-Novoa. Published by The Ontario Beekeepers Association. ISBN-978-0-9782116-1-0. 8½" x 11", 50 pages, black and white. \$35, includes s/h.

From The Introduction:

The objective of this book is to provide the fundamentals of basic genetics and animal breeding since the basic principles of inheritance apply to all animals. The particularities of honey bee biology and the genetic organization of colonies are taken into consideration because the circumstances of this species are different to those of other species. This is not a treaty on genetics, but rather an elemental overview of genetic and animal-breeding principles for readers with little or no genetics background that are interested in the improvement of honey bees. Valuable characteristics of honey bees can be maintained or improved with the knowledge and use of some genetics principles and the application of breeding techniques.

If you don't have a background in basic genetics, but want to do the right thing when breeding, selecting and producing queens – for yourself or for sale – you absolutely, positively need to read this book before next Spring. Absolutely.

Here's what's inside: Basic Notions on Principles of Genetics, Genetic Organization of the Hive Inhabitants, Selective Breeding Principles, Selection, Mating Systems and Mating Control, and Selective Breeding Programs. Plus, there's several samples of data sheets and selection guides.

If reading a 300 page book is more than you can bear, and attending classes days on end isn't in your schedule, this is the book you want. And need. It's worth every penny you'll pay.

To get your copy contact Virginia Steckle, Ontario Beekeeper's Association, 75232 Branson Lane, Bayfield, ON N0M 1G0, 519.565.2622, info@ontariobee.com.

RESEARCH REVIEWED

The Latest In Honey Bee Research

Steve Sheppard

"Will the causative agent please stand up?"

Colony collapse disorder (CCD) is one of the most recent maladies reported to afflict honey bees. The disorder has been characterized to include a rapid decline in the adult bee population, often leaving only the queen and a "handful" of workers in colonies containing substantial amounts of capped brood and food. While the prevalence of CCD throughout beekeeping operations in the U.S. and the numerical loss of colonies in 2006-2007 has been roughly estimated (23% of beekeeping operations losing an average of 45% of their colonies) much more certain is that the media coverage of honey bee losses and the possible decline in managed pollinator populations has brought unprecedented attention to the role of bees and beekeepers in agriculture.

Until now, one of the elusive aspects of CCD has been the somewhat strange assemblage of symptoms as described by beekeepers. Taken separately or in parts, some of the symptoms might be explainable by the usual suspects, such as parasitic mites, overwintering, pesticides, nutrition or stress. However, the general acceptance of CCD as a novel malady suggests that the cause may be either a previously unknown pathogen or interaction among known factors. Progress toward understanding a biological basis for CCD was recently made in a paper published by a team of scientists (Cox-Foster et. al. 2007). The collaborative nature of the search for microbes associated with CCD is evidenced by the fact that 22 different co-authors contributed to this scientific publication.

The team of researchers utilized "high throughput" genetic sequencing technology to screen samples of bees for the presence of a large set of microbes. The samples they examined included bees from CCD colonies taken from four migratory beekeeping operations from across the U.S. (with

colonies that overwintered in Florida or California). Additional samples were taken from non-CCD sources in Pennsylvania and Hawaii, from "apparently healthy bees" imported from Australia and from four samples of imported royal jelly from China. The researchers extracted and sequenced nucleic acids from all the samples and compared them to published sequences of known organisms available in a large "public library" of sequences known as GenBank. Based on these comparisons, the authors were able to confirm the presence of a host of organisms within the bee samples including, bacteria, fungi, viruses, mites and trypanosomes. The description of the large set of associated organisms is fascinating information and includes for example, 81 distinct fungal RNA sequences. Based on all the data, the authors were able to rule out certain suspects as likely causative agents for CCD. For example, one of these, *Nosema ceranae*, was found in both CCD and non-CCD colonies.

One suspect found to be associated with CCD was Israeli Acute Paralysis Virus (IAPV). RNA fragments from this virus were found in all of the CCD colonies, in the Australian honey bee sample and in two of the four royal jelly samples. IAPV is a recently discovered virus that appears to be either a distinct lineage of Kashmir Bee Virus (KBV) or a new species. To further examine the rela-

tionship between CCD, these viruses and *Nosema*, the researchers examined pooled samples of bees from 51 colonies (30 CCD and 21 non-CCD). They found that the patterns of co-infection were very complex. However, with a single exception, IAPV was found only in CCD samples. Over 80% of the bee samples from CCD colonies contained IAPV. KPV was

found in all CCD samples, although it was also present in 76% of the non-CCD samples. The authors noted that all the beekeeping operations sampled for CCD used honey bees imported from Australia or intermingled their bees with other operations that contained Australian honey bees. They further pointed out that the initial importations of Australian honey bees occurred in 2004, coincident with early reports

of U.S. honey bee declines.

In conclusion, the authors discussed the utility of their approach (metagenomic sequencing) to provide a "comprehensive inventory of microflora in CCD and non-CCD populations...". The authors were also careful to point out that they had not "proven a causal relationship between any infectious agent and CCD..". However, given that the presence of IAPV occurred almost exclusively in CCD operations and the coincident timing of the importation of IAPV-infected honey bees and reports of CCD, the authors noted that IAPV is a "significant marker for CCD." Undoubtedly, this paper will



engender a closer look at viruses as part of the overall story of honey bee health. Whether a causative agent or simply a marker associated with the expression of CCD, this research represents a significant start along the path to understanding "whatever it is" that has been called CCD. **BC**

Dr. Steve Sheppard, Thurber Chair, Department of Entomology, WA State University, Pullman, WA 99164-6382, shepp@mail.wsu.edu; www.apis.wsu.edu.

Cox-Foster, D.L., S. Conlan, E.C. Holmes, G. Palacios, J.D. Evans, N.A. Moran, P-L Quan, T. Briese, M. Hornig, D.M. Geiser, V. Martinson, D. vanEngelsdorp, A.L. Kalkstein, A. Drysdale, J. Hui, J. Zhai, L. Cui, S.K. Hutchinson, J.F. Simons, M. Egholm, J.S. Pettis, W.I. Lipkin. 2007. *A metagenomic survey of microbes in honey bee colony collapse disorder.* Scienceexpress/www.scienceexpress.org/6 September 2007/ page 1/10.1126/science.1146498



Buying Bee Propolis
And/Or Hivescrapping
For Over **30** Years

**NEW
PRICING**

Call
**Beehive
Botanicals**
for Details

800.BEEHIVE
www.beehivebotanicals.com

Member of
**The American Beekeeping
Federation**

BEES & BEEKEEPING SUPPLIES
FREE CATALOG 

RUHL BEE SUPPLY
17845 SE 82nd Drive
Gladstone, Oregon 97027 (503) 657.5399
www.ruhlbeesupply.com

Lazy Bee™ (866) LAZY-BEE
lazybeestudio.com

BEE & SOAP SUPPLIES
P.O. Box 1837 - Hiram, Ohio 44234
Contact us for a free color catalog!
"We work hard to make beekeeping easier for you!"

Happy  Thanksgiving

Vented Bee Hive Cover
Inventor: Norman R. DeYoung

Patent 6579147
608-794-2497
Fax 608-794-2704
(Prices subject to change)
PO Box 7
9392 Old Beetown Road
Beetown, WI 53802

Features & benefits:

- Uses all-natural ventilation
- Wooden frame fits around hive
- Screening promotes natural air flow
- Increases production of honey
- Virtually maintenance-free

Cover with shipping & handling \$43.00 (in the 48 states)

The patented **Vented Bee Hive Cover** uses natural ventilation to keep bees cool during hot periods, encouraging the bees to continue working hard to produce honey. The innovative passive device with absolutely no moving parts takes the shape of a box frame made from wood and covered with stainless steel screening. Once in place over the hive, the all-natural ventilation is produced by the movement of the bees' wings. Thus, a cooler hive increases production of honey in the summer.

Hummerbee Forklifts
XL & Turbo

The Premium Quality Forklifts
More Features
More Optional Equipment
After the sale, "we take care of our customers"

Ask about "Dave" our west coast Rep - Plans to open our California facility in 2007



This Competitively Priced XL Model Retains Many of the Premium Features of the Turbo Model



**XL: 1600 lb Rating
Turbo: 1800 lb Rating
Turbo Tipping Load
Straight: Over 3000 lbs**



Customers Say "Driving A Hummerbee Turbo Will Spoil You!"

Call us to discuss any special needs

43 HP 4 Cylinder Diesel
Hydraulic Foot Pedal is "Very Smooth"
Extra Cooling
Large Floatation Tires

Exceeds All ANSI Certifications At Rated Weights

Testimony: "The more I use it the more I like it. The Hummerbee is smooth, stable, and fast." - Mike, B&M Apiaries

A&O Forklift
800-943-8677
www.hummerbee.com

A&O Forklift - Your Best Source For All Your Hummerbee Turbo & XL Needs!

A Knowledgeable Staff For Sales - Parts - Service - Advice

Attachments: Hive Clamps - Mowers - Buckets - Brooms - Drum Handlers

Last month I discussed the arrival of the *Varroa* mite (*Varroa destructor*) and the seminal decisions made by beekeepers and regulators, which abandoned regulatory efforts and steered beekeepers toward dependence on what has been termed the "pesticide treadmill." The first approved pesticide (fluvalinate, brand name Apistan®) would help beekeepers weather the first decade of the *Varroa* experience in the U.S. But this "silver bullet" and others of its ilk could only be relied on temporarily as the chemicals and mites engaged in a war of effectiveness.

A problem with *Varroa* was that it was so devastating to honey bee populations. Beekeepers observed the effects of the mite on the wild or feral populations left to their own devices. Over 90 percent died (collapsed), depleting the landscape of this heretofore ubiquitous insect, a loss that commercial beekeepers could not tolerate and stay in business. Thus, beekeepers became paranoid about treating their bees in an effort to rid them entirely of mites, more often than not treating due to the presence of a single mite. Because the first treatment material, the pyrethroid fluvalinate, formulated as Apistan®, was so effective, killing well over 90 percent of the mites in a colony, this appeared to be a definitive answer to mite control. But in the end this only accelerated the development of resistance by *Varroa* to the treatment. In addition, there were rumors of increasing use of "extra-legal" applications that worried many in the regulatory and research community.

In April, 1992, I wrote: "The rest of the United States is starting to realize what many beekeepers in Florida have learned in the last two years. *Varroa* mites are here to stay and monitoring the mite population is the best way to keep parasite populations low. Dr. Eric Mussen in his January/February 1992 issue of *From the UC Apiaries* published a piece called 'Varroa Getting Nasty.' It seems many beekeepers in California got a surprise when their colonies collapsed last Fall. The symptoms at first seemed to be classical for tracheal mites: 1. rapid loss of adults; 2. tiny clusters of bees with a queen; and 3. abundance of stored honey and pollen. Not characteristic was

Malcolm T. Sanford

Two Decades of *Varroa* Part II



"A 'live and let die' approach to the wild and commercial honey bee populations was crucial to the development of population-wide *Varroa* tolerance."

varying amounts of capped brood. The latter revealed that something else was going on; the adults were not being replaced. Developing pupae were killed in their capped cells by mites and never emerged.

"To prevent colony collapse, Dr. Mussen suggests checking bees for *Varroa* two to four times per year. Finding a mite or two doesn't mean the colony is in immediate jeopardy, but it will require treatment sooner or later. And if another check, not too much later, turns up a lot of mites, then you are the unlucky recipient of someone else's failure to detect a problem. Choose your method of colony examination (ether roll, tobacco smoke, Apistan®), he concludes, early detection is critical to colony protection.

"Looking for trouble,' is the way Dr. Roger Morse categorizes the perpetual hunt for *Varroa* in the April, 1992 issue of *Bee Culture*. He concludes, '...in all probability every beekeeper in the continental U.S. and Canada will have infested hives within two to four years.' He recommends, therefore, that beekeepers in the U.S., Canada and Mexico check colonies for *Varroa* at least twice a year. Although it has been reported that colonies sometimes take years to die after being infested with *Varroa*, there are exceptions. Dr. Morse speaks of a New York beekeeper whose hives produced over 100 pounds of honey in July and August, yet were dead by late Fall. And Dr. Mussen describes a California beekeeper, who after a good producing season, saw 75 percent of his colonies severely damaged or dead by Christmas. That beekeeper is no longer in business and had to sell out at submarket prices. These

cases may be because of drift by bees from nearby heavily infested apiaries that were not treated. Also the fact that mites are hidden and protected in capped brood cells may mean a serious undercount in those found on adults or in bottom board debris.

"Fortunately, detecting *Varroa* is a fairly simple process. A number of methods are described by Dr. Morse, including: examining brood or adults; sorting through bottom board debris; and using the ether roll. The technology to determine when a *Varroa* infestation reaches a treatable level by any detection method currently in use has not been well worked out. Detection results may vary and are dependent on bee/mite population dynamics. For example, in the Fall, Dr. Morse says, with little or no brood, you are more likely to find mites on adults, whereas in the Spring they will be easier to find in brood. Practical experience by the Florida Division of Plant Industry indicates that when 20 mites in an ether roll of approximately 300 adult bees are found, a colony should be treated with Apistan®. However, Dr. Harvey Cromroy of the Entomology/Nematology faculty, University of Florida, believes more than five mites is a treatable level. Dr. Morse concludes finding 30 to 40 mites per hundred bees (ether roll) is serious and the colony may be beyond saving. The ability to correlate ether roll with other detection methods is not presently available." ¹ This lack of a suitable treatment threshold has confused the *Varroa* control issue considerably, and to some extent this still exists today.

Since that time, other detection methods have been implemented

beyond the ether roll, which had the disadvantage of killing bees and using smoke from materials like citrus leaves that disrupted the colony's organization. I stated in an earlier column in this series that Dr. William Ramirez of Costa Rica had suggested powder be used as a control as far back as November, 1987. This concept is now being employed using powdered sugar pioneered by Dr. Kamran F. Fakhimzadeh, of U. Helsinki in Finland² and the University of Nebraska.³ In addition, many kinds of monitoring boards have been developed that can be inserted into beehives, often with greased surfaces to trap fallen mites and not allow them to return to their host bees. These also employ a screen (eight mesh to the inch), which allows the mites to fall through, but keeps the bees from contacting the monitoring device (sticky board) on the bottom board. These screened bottom boards are now in widespread use and beekeepers have often found them advantageous in their own right, eliminating moisture from a colony ensuring better Winter survival.

Drone brood is preferred by *Varroa*. It has a longer post-capping period and so a female mite infesting a developing drone can potentially produce more offspring. Drone brood is also the only caste affected by *Varroa* in the original host, the Eastern honey bee (*Apis cerana*). The mite is so devastating on the western honey bee (*Apis mellifera*) precisely because it infests both drone and worker brood. Drone brood management, therefore, can be used effectively to detect as well as control mites. Trapping mites in drone brood and then removing them before emergence has become an excellent strategy, especially in developing countries where pesticides are often not an option. Dr. Zachary Wang at Michigan State University has developed what he calls a Mite Zapper®, which also targets drones.

Pesticides, so-called "hard" applications, have become the treatment of choice when available, especially in large-scale operations where time and labor expended on *Varroa* control needed to be kept to a minimum. Beekeepers got a good decade of effectiveness from the pyrethroid, fluvalinate, originally applied via wood strips, but

later in plastic strips, formulated as Apistan®. However, for many it has now lost its effectiveness. The next chemical to come along was the more highly toxic and problematic organophosphate, coumaphos, formulated on plastic strips as CheckMite+®. Beekeepers are only beginning to experience dealing with this material and already it shows signs of mite resistance. A third material, amitraz, representing a different class of pesticides, was employed for a short period as the labeled material, Miticure®, formulated on plastic strips, but was withdrawn from the market by the manufacturer as too problematic. The fact that amitraz resistance by *Varroa* mites exists, however, suggests that it has often been used in "extra legal" formulations.

Hard pesticides like fluvalinate and coumaphos were relatively flexible molecules that worked across a wide range of temperature and other variables. This allowed beekeepers to rely totally on them to manage mite populations. With elimination of these materials through *Varroa* resistance fostered by continuous use, beekeepers have had to become much smarter in mite control by using less-toxic, more so called "soft" materials. These include organic acids (formic and oxalic) and essential (thymol, wintergreen) and other (food-grade mineral) oils. These materials were much less forgiving and more or less effective based on environmental circumstances in the beehive. However, the potential of them impacting the honey crop through contamination was less because many are found naturally in honey.

As beekeepers have lost effective materials due to resistance, they have resorted to a technology called Integrated Pest Management or IPM. Although often viewed as not employing chemical treatments at all, IPM is really about managing pesticide use to minimize contamination and the development of resistance. Its touch stone is the idea that beekeepers should not use pesticides to totally rid bees of mites (eradication philosophy), but to maintain a low non-damaging level of *Varroa* in their colonies. This is done using a number of technologies, including hard pesticides, soft chemicals (organic acids and oils, and biomechanical tools (screened bottom boards, powdered

sugar dust, drone trapping).

Varroa is here to stay. This conclusion may seem obvious, but cannot be stated too many times in the modern U.S. beekeeping climate. My friend Martin Braunstein, an Argentine queen breeder, has even suggested it be referred to as the fourth individual in the colony after the queen, worker and drone.⁴ Given this circumstance, the long-term solution to *Varroa* mite control must be looked at in terms of innate tolerance or resistance through genetic management. Fortunately, there are indications that the European honey bee (*Apis mellifera*) can implement this technology itself just as has its cousin the Asian honey bee (*Apis cerana*). Two outstanding examples of this have been documented.

The Africanized honey bee is a New World example of this phenomenon. *Varroa* mites were introduced via Japan in the 1970s into Paraguay and quickly spread to much of Latin America. Mite tolerance or resistance by *Apis mellifera* is most documented in Brazil. The Africanized honey bee in this sleeping giant has metamorphosed from a beekeeping industry pariah to savior.⁵ *Varroa* is ubiquitous in Brazil, but no treatments of any kind are used by beekeepers. Clearly, the Africanized honey bee infested with *Varroa* cannot produce the prodigious amounts of honey per colony that true European honey bees do, but this is made up for by the sheer number of feral colonies found in the wild. In addition, Brazilian beekeepers have to do minimal management when compared to that required by *Varroa*-infested bees in much of the rest of the world.

The other example, more recently come to light, is South Africa. Relatively recently infested with *Varroa* (1997), I wrote the following in my report of the Apimondia meeting in Durban, South Africa in 2001: "It will be instructive for the rest of the world to closely follow the *Varroa* situation in south and central Africa. This situation not only has great importance for beekeeping, however. The honey bee is a native insect in Africa and therefore its survival and health is important for many wild plant communities that rely on it for pollination and propagation."⁶

The jury is in with a report in

the 40th Apimondia conference in Melbourne, Australia just concluded. "The rapid development of mite tolerance in South African honey bees is thought to be due to the well developed removal of *Varroa*-infested brood and the short post-capping period of worker brood, particularly Cape honey bees. Together these resulted in a very rapid increase in infertile mites in the colony, the collapse of the mite population, and *Varroa* tolerance." Tellingly, it was concluded: "A 'live and let die' approach to the wild and commercial honey bee populations was crucial to the development of population-wide *Varroa* tolerance."⁷

There is more and more evidence that *Varroa* tolerance already exists at least in rudimentary ways in European honey bees in the U.S. The introduction of Russian honey bees, as well as breeding bees for hygienic behavior in general and *Varroa* in particular, is quite promising.⁸

All the above evidence is encouraging in the sense that the *Varroa* situation has indeed stabilized itself and is now moving into a different phase in U.S. beekeeping. Thus, beekeepers now have rational and

powerful tools to manage mite populations in colonies and the long-term solution provided by nature, genetic selection, is on the verge of becoming a reality. Given these circumstances, I am more encouraged than ever that beekeeping in the U.S. has a brighter future than many might have thought a few short years ago. Many of the challenges *Varroa* has wrought in the 20 years since its introduction still exist, but it is more and more probable that my statements written in a recent *Bee Culture* column might be apt when I said I didn't want to be forced into being a pest control operator. Thus, it may not be as protracted as I thought when I concluded: "I've waited a long time to resume my beekeeping activities."⁹ **BC**

References:

1. Sanford, M.T. *Apis Newsletter*, Volume 10, Number 4 (April 1993), <http://apis.ifas.ufl.edu/apis92/apapr92.htm#3>, accessed August 14, 2007.
2. Fakhimzadeh, Kamran. *Detection of major mite pests of Apis mellifera and development of non-chemical control of varroasis*. Department of Applied Biology, University of Helsinki, Finland,

accessed August 14, 2007. <http://thesis.helsinki.fi/julkaisut/maa/se-lai/vk/fakhimzadeh/detectio.pdf>

3. Ellis, Marion, *Bee Tidings*, University of Nebraska, January 2000. <http://entomology.unl.edu/beekeeping/tidings/btid2000/btdjan00.htm#Article2>, accessed August 14, 2007.
4. Sanford, M.T. 2007 *The Fourth Individual in a Honey Bee Colony*, *Bee Culture* (September) Vol. 134 (9): 17-19.
5. Sanford, M.T. 2005. *Beekeeping in Brazil: A Slumbering Giant Awakens*, *American Bee Journal* Vols. 144-145 (four installments: September & December 2004; January & March 2005).
6. Sanford, M.T. 2002 *Apimondia in South Africa*, *Bee Culture*, Vol. 130 (seven installments: January, February, March, May, July, August, September).
7. Allsop, M. 2007 *Varroa Tolerance in South African Honeybees*, *Proceedings of the 40th Apimondia International Apicultural Congress*, Abstract No. 91.
8. Sanford, M.T. 2004. *Mite Tolerance in Honey Bees*, *Bee Culture* (October) Vol. 132 (10): 23-26.
9. Sanford, M.T. 2005. *Survivor Bees Around The World; Why I No Longer Keep Bees*, *Bee Culture* (August) Vol. 133 (8): 19-21.

HONEY CONTAINERS



2# - Honey Bear

Front and back label panels
Also available in 8oz and 12oz

Lightweight

PET



2# - 38-400

Also available in 1# and wide mouth

Clear

Squeezable



3# - Skep

Also available in 1# and 1.5#



Check out our website
www.sailorplastics.com

Order online or request a catalog

We accept



8 Maine Ave. P.O. Box 309
Adrian, MN. 56110
800-380-7429
507-483-2469
Fax 507-483-2777
E-Mail: sales@sailorplastics.com

Only The Strong Survive

Melanie Kirby

New Mexico's Southwest Survivor Queen Bee Project



When looking closely at current bee literature there are several queen producers advertising Survivor Queens. As a conscientious beekeeping enthusiast you may have asked yourself, "What are Survivor Queens- what do they represent to beekeepers? And, what do they propose about our current state of beekeeping?"

Survivor Queens are not a new idea, but are creating a current fervent interest as the honey bee industry looks to develop and implement management protocols to revitalize and secure American beekeeping.

When we look to the natural world we find that plants and animals that have withstood the passage of time have something to share – that only the strong survive, which is sometimes touted as "The Survival of the Fittest." In our operation Survivor Queens indicate the quality of tested, filtered propagated stock. In simpler terms, colonies which exhibit high production, pest/disease resistance, hygienic behavior and gentleness through a minimum of two yearly cycles are inducted into our breeding program and serve as daughter breeders or drone breeders. Mother Nature has "filtered" the stock for us. Or, as our good beekeeping associate Steve Wall of Buckin' Bee in Santa Fe, New Mexico puts it in regard to his hives, "I give them the old 007 approach, 'Live and Let Die'."

Introductions: I began beekeeping with Africanized honey bees in Paraguay, South America, as a U.S. Peace Corps Agriculture Sector Beekeeping Extension Volunteer. I then worked for two commercial queen rearing outfits on the Big Island of Hawaii for over four years as grafter and in-field beekeeper. I spent a season grafting and package nuc making in Florida for a migratory operation. My partner, Mark Spitzig, a Yooper from the Upper Peninsula of Michigan, owned and operated Superior Honey Farms of Marquette, Michigan, for the past eight years. He spent a couple of seasons learning package nuc, queen rearing and varietal honey production in Florida for a migratory operation, which is where we met. We decided to collaborate and establish a "Border to Border Cooperative: From the Shores of Lake Superior to the Banks of the Rio Grande – Zia Queenbee Co. and Superior Honey Farms."

At first we hoped to develop a "sustainable" system whereby his honey production in Michigan could be assured each Summer season. I like to describe, to those of us from warmer zones, the Upper Peninsula of Michigan as having three months of lukewarm weather and nine months of Winter. Spring is in June, Summer is in July and Autumn is in August. The rest, to me, is pretty much varying degrees of *really* cold. All in all my experience in

Michigan's U.P. is one of wondrous greenery and more trees than people.

The U.P.'s short intense warm season can produce ample honey- enough to leave anywhere between 90-120 pounds of honey on each hive plus 100 + pounds per colony in a good year. Sounds great- right? But one is not able to cover Winter losses and grow in the long run with a short season and a small number of hives. Hence, that's why Mark wanted to diversify and extend his season and find suitable wintering grounds for early Spring buildup.

So after a year's worth of convincing, Mark gave my New Mexico a chance. Still, he was convinced that all of his hives would turn mean, but has been surprised that they have all remained gentle and equally surprised that New Mexico hives are quite gentle as well.

Even I am fascinated with how much agriculture takes place here, where there is limited water and high-altitude dry and riparian deserts. "The Land of Enchantment" boasts a variety of microclimates: it is the nation's largest producer of pecans, onions, chile, with ample cacti: cholla, prickly, barrel, sotol, yucca, as well as mesquite, chaparral (creosote), juniper, clover fields, and sunflowers. It is not odd to see dry land desert vegetation, milkweeds, Rocky Mountain globe mallows, apple orchards, cotton fields, lavender and berry patches, all in one day.

Most folks envision New Mexico as being a dry, hot desert but we have no sea level locations and ranges in altitude from 2000 feet to over 13,000 feet. The main source of water is El Rio Grande, which is the only U.S.



Steve Wall, right, of Buckin' Bee Honey (Santa Fe, NM) displays his double graft of Italian Survivor stock with Mark.



Selection of 3-day old larvae for grafting

Selecting and grafting larvae from breeder frame.

water artery to involve three states and two countries (Colorado, New Mexico, Texas- USA and Mexico). The Southern Rockies chisel through the state and there are many other rivers and streams that carry fresh, snow melted water down from the mountains into the valleys, where most folks live.

But be aware that where there is water there is also struggle, and it gets hot and dry and keeping bees in this environment can be risky. Mark says that we get nine months of really hot, three months of not so hot but Winter is still Winter, with frost in the lowland and snow and skiing, in the mountains.

I have yet to mention Africanized Honey bees – AHB. Because of New Mexico's aridity and scarcity of water, the high-altitude and mountainous isolations AHB colonies have been unable to permanently establish themselves in the Land of Enchantment. Numerous discussions with NM State Dept. of Agriculture Bee Inspector and Asst. Bureau Chief of Entomology and Nursery Industries, Mr. Greg Watson and numerous experienced, seasoned beekeepers throughout the state, share that AHB appearance is seasonal. AHB colonies have yet to be found throughout the year. They have occasionally been noted in the middle of the Summer along the southern Rio Grande and theory has it that they come through either on trucks heading to the West/East coasts or, they "migrate" up and over from Mexico and Arizona, following the blooms and retreating for them as well when it begins to cool in the Fall.



Melanie installs a queen cell on a mating nuc brood frame that will hatch within 48 hours.



NWC Survivor Queen Breeding contender.

Another concern is that neighboring regions ship them into the state as packages – unbeknownst to those who purchase them. Hybridization is no doubt occurring but to what extent is still under discussion. We routinely retrieve swarms and perform swarm removals from the southern portion of the state and have kept them all. A few have been feisty – but their survival, their virility and their resistance is notable. We keep southern swarms throughout the seasons and monitor their behavior, as well as their production, pest/disease resistance and hygienics. Any colony that is not workable without a veil and gloves is requeened. I can honestly say that we have only recommended extermination once.



Mark stocking mating nucs.



Mark displays frame of accepted grafts.

I cannot speak for other queen producers but for ourselves, in the beginning, we simply began by deciding to quit medicating. The number of colonies we lost was harsh, yet bearable. We figured, "better weed them out now before we have so many that the pain of saving unused equipment deters us from continuing". Mark's preference has been for New World Carniolans and the SMR Italians. We kept track of which girls made it through multiple Winters on Lake Superior and had honey to spare come Spring. We leave all colonies in the U.P. on screened bottoms year round with 3/8 inch vent holes in their supers for ventilation. This is crucial in the winter where they can be virtually buried and have trouble getting air without their heat condensation raining back on them.

Once we established a pool of survivor stock, it became apparent that without the continuous introduction of new diversified survivor stock, the possibility of inbreeding could be a reality. To expand our genetic pool, we routinely buy diverse strains of queens from various producers and monitor them. These purchased queens must also produce well and survive through at least two Winters before becoming contenders in our breeding program. Research shows that profound queen fecundity/promiscuity allows for diverse sister and sub-sister families within one hive. This means that by having diverse fathers, perhaps only a fraction of the overall population could be susceptible to a certain pathogen or ailment while the remainder of the diverse population is resistant and able to overcome the situation thus

preserving the colony as a whole. Our mating yards are saturated with diverse drone breeders to ensure healthy and full mating while also leaving queens in their mating nucs for a minimum of three weeks after hatch to verify solid brood laying patterns.

We replicated this same system in New Mexico. Mr. Ken Hays of Hays Honey and Apple Farm in Bosque Farms, New Mexico, (20 miles south of Albuquerque). He has developed his own Russian and Italian survivor stock and requested that we rear queens for him from his own stock. He *has refrained from medicating for five years.*

We decided to give it a try and to try some survivor cross stocking- his prize queens' daughters with our drones and our prize queens' daughters with his drones. Next thing you know, we became fascinated with cross-stocking. This leads us to where we are today - recruiting experienced seasoned beekeepers to choose from the best of their quality stock and to share it. Western SARE (Sustainable Agriculture Research Education) awarded us a Farmer/Rancher grant in 2007 to establish the project.

With increased interest and the need to incorporate quality stock from diverse beekeepers in similar regions, we have invited Colorado beekeepers to participate. We do not aim nor claim to be creating a super bee, but we want to encourage other regions to establish a reliable, regional resource for quality honey bee stock that works well for their area. Plus, this minimizes importing new pests and diseases from other locations. Think about it this way: honey bees chosen by beekeepers for beekeepers. Who knows bees better than those of us working with them and depending on our symbiotic relationship with them for our livelihoods? Without them, there is no us, and I do truly believe that their preservation and longevity requires us as well.

As American beekeeping changes we must become Stewards of our Land and promote sustainable beekeeping practices. Plus, we must encourage future beekeepers to evaluate and incorporate sustainable practices to improve ourselves, our communities and our nation.

We hope to share our future findings for the Southwest Survivor Queenbee Project as it unfolds. You can email us at ziaqueenbees@hotmail.com for more information. **BC**

This is a Western SARE (Sustainable Agriculture Research Education), Zia Queenbee Co. and NM Department of Agriculture Collaborative Initiative.

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>
\$14.00	\$13.00	\$12.00	\$11.00

Queens Clipped \$1.50 ea. • Queens Marked \$1.50 ea.
Queens can be shipped by Priority or Express Mail INSURED,
or by UPS Next Day UNINSURED.

THREE BANDED ITALIAN QUEENS

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

Oxalic Acid Vaporizer



The fastest Vaporizer available powered by a 12 Volt car battery. Contrary to liquid oxalic acid there is no harm to colonies.

For more info please call or visit our website
Hellyser Technology Ltd.

685 Dalkelth Ave., Sidney, BC, V8L 5G7, Canada
Phone/Fax: 1 250 656-8727 • Email: orioleln@shaw.ca
<http://www.members.shaw.ca/orioleln>

BEEPOCALYPSE NOW

— Jim Fischer

What with the claims that a virus found in U.S. hives suffering from Colony Collapse Disorder came from Australia, we here at *Bee Culture* wondered how any such thing could happen, if it did, in fact, happen at all.

So, we decided to follow the paper trail of a typical bee shipment.

It turned out to be a very short trail. One sheet of paper, to be exact. This discovery did not inspire confidence.

This export certificate is offered as the sole documentation of the "health" of the package or queens shipped from Australia to the U.S. It isn't quite what we expected in the way of "documentation of the health of bees." Canada is circulating a draft of a very similar document to be used with their bee exports to the U.S. (see sidebar).

The document flatly states that Australia is free of three kinds of undesirable bees, and five different pests and pathogens. This is true only if Australia is actually looking for these bees and pests.

It says that the bees were produced in Australia, which seems reasonable, but even this is a "declaration" of the owner. Why would the inspector need to waffle? What is behind this convoluted wording?

It claims that the hives were individually inspected within 10 days of export. What kind of "inspection?" It was "visual."

Yes, they just **looked** at the bees. That's all. That's their idea of an "inspection."

No actual tests for any pathogens or diseases are done and none of the listed diseases and pathogens can be confirmed without lab analyses.



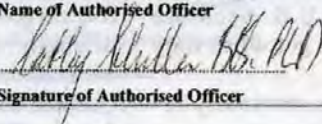
This "certificate" would not have allowed the movement of bees between states in the U.S., so how could it be appropriate for bees shipped across oceans? How can they get away with this?

The short answer is that the World Trade Organization (WTO) exists to *promote trade, not biosecurity*. A better way to put it would be that the WTO exists to promote trade *regardless* of the negative impact on biosecurity. The WTO not only permits shoddy practices like "visual inspections" for things that can't be detected visually, but it punishes countries who demand more stringent biosecurity controls.

We asked the USDA Animal and Plant Health Inspection Service (APHIS) why

they accepted these "visual inspections," and how they could be viewed as anything other than a transparent sham. No one in APHIS management was brave enough to face the question themselves, so their public affairs office told us:

"A visual inspection is an additional measure to safeguard the U.S. against foreign bee pests, such as the *Eurvarroa sinhai*, *Tropilaelaps clareae*, and *Apis cerana*, among others, which can be detected through these inspections. These safeguards are agreed to and recommended by the World Animal Health Organization (OIE)... The [other] bee pests listed in your

 Australian Government Department of Agriculture, Fisheries and Forestry Australian Quarantine and Inspection Service	Certificate of Health to Accompany Animals or Animal Reproductive Material <i>Sections 2.53, 3.04 and 4.03 of the Export Control (Animals) Order 2004</i>	Certificate No 207-000338
Page 2 of 2		
Name and Address of Producer	Date of Export	Flight number
HONEY BEES TO USA		
1. Australia (excluding the Torres Strait Protected Zone) is free from African honeybees (<i>Apis mellifera scutellata</i>), Asian honeybees (<i>Apis cerana</i>), Cape honeybees (<i>Apis mellifera capensis</i>), Asian mite (<i>Tropilaelaps clareae</i>), Varroa mite (<i>V. destructor</i>), tracheal mite (<i>Acarapis woodi</i>), <i>Eurvarroa sinhai</i> , and the Thai sacbrood virus.		
2. The honeybees (<i>Apis mellifera</i>) in the shipment were produced in Australia (excluding the Torres Strait Protected Zone) and are the offspring of bees or semen also produced in Australia (based on an official declaration by the owner).		
3. The hives from which the queen bees/honeybees in the shipment were derived were individually inspected by a Federal or State agricultural official within 10 days prior to export.		
4. The signing of this health certificate was done by an authorised AQIS Officer after reviewing documentation provided by the Federal or State agricultural official conducting the pre-export inspection of the hives.		
5. The honeybees in this shipment have been packaged to prevent the escape of any bees or bee pests using mesh with an aperture diameter of not more than 2 mm.		
6. The shipment does not include any brood, honey, comb or pollen.		
7. During visual pre-export inspection of the hives, the following diseases or parasites were present (yes) /not present (no):		
(No) American foulbrood	(No) Half moon virus	
(No) European foulbrood	(No) Chronic bee paralysis	
(No) Small hive beetle (<i>Aethina tumida</i>)	(No) Kashmir bee virus	
(No) Malpighiomyces mellificae	(No) Melanosis	
C. Schiller B.S. PhD L. FERRARA BVSc MACVSc Name of Authorised Officer	04/0799 Identity N°	
 Signature of Authorised Officer	25/01/2007 Date of Issue	
BLUE COPY IS ORIGINAL		

email (American Foulbrood, European Foulbrood, Small Hive Beetle, Malpighameoba mellifica, Half Moon virus, Chronic bee paralysis, Kashmir bee virus, and Melanosis) are all present in the United States. Because these pests are already established here, APHIS does not have the authority to prohibit entry based on their presence."

This sort of statement from APHIS underscores just how utterly clueless they are about diseases and pests of bees. Both *Euvarroa sinhai* and *Tropilaelaps clareae* are roughly the same size as *Varroa*. We beekeepers are well aware that it is nearly impossible to see *Varroa* on bees that are moving around on combs unless the hive is completely loaded, so we rely upon sticky board tests, sugar shakes, and ether rolls as valid ways to detect *Varroa*. So, for the *Euvarroa sinhai*, *Tropilaelaps clareae*, and all the smaller mites, a "visual inspection" is not just inadequate, unless there's a boatload of them in the hive, it is deliberately and criminally negligent.

The claim made by APHIS that "A visual inspection is an additional measure to safeguard the U.S. against foreign bee pests" gives the impression that "visual inspections" are merely one of multiple "measures" being taken to protect U.S. biosecurity. This is incorrect. The "visual inspections" are the **only** activity directly associated with imported bees. Yet Australia claims that they "don't have" this, that, or the other thing. A more honest statement would be "We haven't found any yet." Of course, you won't find what you aren't looking for, as Australia learned the hard way with Small Hive Beetles. A brutally honest statement would be "We haven't found any, and we aren't interested in looking all that hard, for fear of what we might have to admit finding."

Further, the lack of testing on their end of these shipments leaves the Australians defenseless in regard to the accusation that Australia was the source of Israeli Acute Paralysis Virus (IAPV). They simply don't know. That's a shame. Test data from samples of exported bees would have added some hard facts, and perhaps refuted all the speculation. As it is now, there are two U.S. Senators calling for a bee import ban. They'll likely get what they ask for.

Israeli Acute Paralysis Virus (IAPV) is so closely related to Kashmir Bee Virus (KBV) that genetic testing must be used to tell the two apart, and even then, the correct taxonomical classification of the two remains unresolved.

Suffice to say that any actual testing or inspections worthy of the name would have likely revealed the presence of one virus or the other, or confirmed that the shipments were free of both viruses, even if the testing might not have been able to discriminate one from the other.

This brings up another point that APHIS needs to learn. Their position is a parroting of the WTO's trade-at-all-costs view, "**Because these pests [and diseases] are already established here [in the US], APHIS does not have the authority to prohibit entry [of imported bees] based on their presence.**" One of the clear lessons of the CCD work so far is that bee viruses can mutate rapidly. This is a point that should have been obvious for decades. IAPV appears to be a mere mutation of KBV.

Dr. Edward Holmes, one of the CCD researchers claiming to have found IAPV in both US and Australian bees, said:

"We know from other viruses, like West Nile... that very small genetic changes, I mean, one amino acid change, can turn a benign virus into a very virulent one... it is quite possible that very small genetic changes... may make this virus behave differently in Israel, Australia, and the USA."

It follows that, in the case of viruses, one can expect viruses to mutate, so anything less than sophisticated tests and consistent testing won't keep up. If any bee viruses exist in the exporting nation, a program of ongoing sampling and testing is the only way to verify that new, perhaps virulent mutations of known viruses are not being exported.

Since very small changes can turn a benign virus into a virulent one, and these changes can appear without warn-

ing in local populations of viruses in different countries, then the basic approach to "certification" under the WTO's so-called "biosanitary" rules is nonsense. One never has "Kashmir Bee Virus," one has a **specific strain** of Kashmir Bee Virus, and any of multiple strains could be more deadly than the others.

Indonesia and Southern Asia are sources of lots of the cargo that arrives at Australian ports, and not surprisingly, a few *Apis cerana* swarms have been found on some of those ships. While AQUIS (the Australian Quarantine and Inspection Service) can be credited with doing a fine job, they certainly can't inspect 100% of the cargo containers. No country can – there's just too much cargo moving in and out, and it never stops.



CANADA'S CERTIFICATE Abbas Edun, Ontario

Last June Doug McRory, the Ontario Provincial Apiarist, issued a protocol to be followed by persons who wish to ship honey bee queens or package bees to the United States.

They must contact the office of the local Canadian Food Inspection Agency (CFIA) or an Ontario Apiary Inspector to obtain a copy of the Veterinary Health Certificate.

The inspection must be completed by an OAI for each individual shipment and may be done at any time within 10 days of the shipment. The OAI does an inspection for signs of the following diseases or parasites: American and European foulbrood, Chronic bee paralysis, Half-moon disorder, Kashmir bee virus, Melanosis, Tracheal mites (*Acarapis woodi*) and *Varroa destructor*. As most of these diseases cannot be diagnosed visually, the OAI can only state *that they were not seen*.

The U.S. Customs and Border Protection Agriculture Inspector will

not stop the shipment because of any of the above-mentioned diseases, but they have to be reported on the Certificate.

The OAI also certifies that the bees in the shipment originated in Canada and have never been outside of the country.

After the inspection is done, the OAI signs the Certificate and the beekeeper takes it to a CFIA Veterinarian for signature and payment of the fee. The beekeeper then sends a facsimile of the completed certificate either to Dr. Wayne Wehling or Dr. Colin Stewart of the USDA Marketing and Regulatory Programs at the address shown in the Certificate.

The beekeeper then notifies the Customs and Border Protection Agriculture Inspector at the border crossing four hours before arriving there with the shipment that he will be taking bees across. If there are problems at the border, the beekeeper should ask the Inspector to call either Dr. Wehling or Dr. Stewart to ensure that the shipment is acceptable.

The certificate is valid only for queens and packages of honey bees.

Hive bodies, brood, comb, pollen and used beekeeping equipment are prohibited from entering the United States.

So, can they claim that they have detected and eradicated every bee swarm that might have stowed away in cargo? All they can do is claim that they have eradicated every one they found. Given less than 100% inspections it's only a matter of time before foreign bees slip in. But bees from Indo-Asia aren't as much of a potential problem as are their pests and diseases.

Tropilaelaps clareae has jumped from *Apis dorsata* to *Apis florea* to *Apis mellifera*, and, in a few cases *Apis cerana*. Just like *Varroa*, the worst problems seem to be the pests and diseases that move to *Apis mellifera* from other bee species.

The easiest way for pests and diseases of bees to spread is on (or in) live bees themselves.

So, while firm proof may be lacking that IAPV contributes to CCD, and only the sketchiest evidence links Australian exported bees to the problem, we can let the researchers work these issues out and focus on the larger problem – a lack of any inspections worthy of the label. This larger problem is the much bigger threat. It will continue to exist regardless of how the IAPV issue is settled.

These "visual inspections" are a fraud. The Australia-

lians have no idea what they are shipping along with their bees. If they won't clean up their act, we have to inspect every shipment on the receiving end, using methods that actually detect pests and diseases.

There isn't enough evidence to justify a ban, and I'm not advocating one. But there is enough evidence to demand that people start doing their jobs. It would be nice if the "USDA Animal and Plant Health Inspection Service" realized that it was their job to actually start doing some "animal health inspections" on imported bees.

But right now "bees" are still under the "plant" side of APHIS. That seems to be an obvious part of the problem. So, step one is to get bees out from under the "Plant" division and over in the "Animal" division, where standard practices exist for inspecting live animals beyond merely glancing in their general direction. Step two would be to decide how we are going to inspect shipments ourselves, and what tests we are going to demand of exporters.

But the sham of pretending that anything at all is known about the health of these exported bees has to stop here. These certificates are admissions of guilt, not assurances of health. **BC**

Jim Fischer lives, writes and keeps bees in New York City.



Order today!
Ready-Made Patties
From
Global Patties

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

Elsewhere worldwide call 1-403-948-6084 or email frank@globalpatties.com

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

Visit us at 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.



Plastics Packaging Concepts
Honey Angel
12 oz. Capacity
(14 oz. net wt.)

Available in LDPE and Clear.

- John 3:16 Engraved on back
- White caps available
- Custom Labels - 20 characters per line
- 5 Lines Maximum

P.O. Box 617

Garden City, MO 64747

816.862.8703 or

FAX 816.862.8702

www.ppc3.com

Clear Material

MasterCard & Visa
Accepted

STARTING OUT

First Flights

Karen Edmundson Bean

Some advice for not-yet-beginners

This is for all the people starting out in beekeeping. Welcome to the fabulous, fascinating world of bees. It is nature, science, art and chance all rolled into one endeavor. But there are a few things to bear in mind as you enter the world of beekeeping.

This is farming, with all the problems of weather, breeding, disease, health and timing that farmers face. To make it more challenging, we're farming wild animals who can leave at any time. We have to create an environment that they feel is the best place in the world for them to live and make honey. On the positive side, at least you don't have to muck out the barn.

There are a lot of opinions out there on how to do everything from preventing swarms to breeding queens. Most have been tried; some have succeeded. You need to try out the ideas that suit you, your sensibilities, and your time. Some will work, some will fail.

You will lose hives. People with years of experience lose hives. 30% or more loss is not unusual these days. There seems to be something different that hits the bees each time you turn around. Who, a year ago, was talking about CCD?

There are positive things about losing hives: 1) you have a supply of drawn comb, and probably honey, to feed the next split or package that you hive. 2) The ones that survive are the ones better suited to your area and your method of beekeeping.

Things that work in another area of the county or even your county may not work where you live. The rainy foothills of the western Cascades are a much different environment than the flatlands 20 miles away or anywhere where the sun actually shines. You have to just work out what is best for your location.

The books are good, but issues in beekeeping are changing fast and publishing a book takes a lot of time. Get the magazines (*Bee Culture* and *American Bee Jour-*

nal, and any others you fancy) and look at the web (*Bee Culture* (www.BeeCulture.com), and *BeeSource.com* are marvelous sources for ideas and discussions). I'm not attached to the web – the internet, can't live without it can't live without it – but it's a fabulous place to bounce ideas around.

Beekeeping is not a contest of "I have more hives than you." Start small, make your mistakes on a few hives, then when you're happy start increasing to the number of hives that work for you.

You don't have to keep your bees in deeps. Some people use only mediums (I can't lift a deep, but I can lift mediums and, as I don't use chemicals, I can swap frames from honey supers to brood chambers and create splits easily). Eight frame equipment is becoming popular again that are also easy to lift, whether deeps or mediums.

Go wild with the paint on the outside of whatever type of hive you choose. We've all seen those pictures of nice uniformed colored hives. It makes a good image, but it's not all that good for bees. They can get lost. Just think about the last time you "lost" your car or truck in a mall's packed parking lot. It happens to the best of us, including bees. A varied selection of colors on your hives benefits you as well. Paint stores often reduce prices on good quality paints at the end of the house painting season, or when a manufacturer

changes formulas and colors. You also get to use your latent artistic tendencies.

You may not need to own extraction gear right away. Find beekeepers in your area who are willing to trade work for extraction. You will save money, and gain experience in beekeeping and honey extraction. Then you can decide what equipment is right for you. Every beekeeper I know can use a helping hand.

If you are installing a package on foundation make



Eight-frame, 10-frame, colors or no colors – hive equipment should fit your style and nobody else's style.

that sugar syrup and feed, feed, feed. To create one pound of beeswax, bees need to consume the same amount of feed that would create eight pounds of honey. Without wax your queens have nowhere to lay and your bees don't have a place to put bee bread (made from pollen) or store honey. Think of your bees as a construction crew building drawn comb. You don't want to eat or especially sell any of the substance they make from the sugar syrup. It will be all right for the bees, but not for anyone else.

You can have your bees create their own queens. You'll need a functioning hive to do it because it all starts with "take a frame of eggs and larvae." It will slow down your honey production because it takes time for the queen to develop and mate, if she does. However, if you don't have the money to buy queens and you want to increase your hives, don't worry about getting honey from those hives in the first year.

You should have some diversity among your bees, so you can weigh the pluses and minuses of each queen type, and each supplier. A nice way of saying, you'll have to buy a few packages, then, later as you do splits, you'll need a few queens from different suppliers. Find one that seems to do best where you are, then raise some queens using her as the mother.

You will get a hive of evil bees sometime. They're not Africanized, but they are jerks. This happens with all livestock. Ask any one who has dealt with an obnoxious bull or ram.

Being stung is part of beekeeping. Remove the stinger fast – scrape, pull or push it out. Then go for the cold. Ice, or anything frozen from the fridge helps a lot. Get a bee suit. It's worth the money. And a *good* bee veil.

Stretch: before and after you work on your hives. The libraries are full of books on stretching, from yoga to routines designed for military personnel. You may feel silly, but it beats feeling like you won't ever move again when you pull a muscle.

One last thing from the Pacific Northwest: It's not the cold; it's the damp. Keep your hives as dry as you can. Roofing tarpaper and plywood are wonderful things.

Have a lovely time with the bees. There's nothing in the world like beekeeping. **BC**

Karen Edmundson Bean has been keeping bees for four years in foothills of Mt. Baker in northwest Washington state. She is a locally and nationally published freelance writer on science and the environment. She also produces natural history and backcountry DVDs at Walking-Wild.com.

The Next Generation

Lonnie Funderburg

That's my oldest grandson, Jonathan, when he was just over two years old. He is still that relaxed around a beehive. His grandmother has encouraged me to involve him with the bees, and Jonathan has always taken an interest in the bees. He has been stung at least once when he grabbed a bee on a ball clover blossom in our front yard. I don't think

he remembers that incident. He has never been stung in the beeyard with me. Of course, he wears protective clothing.

On a Saturday, while making my first inspection of the new year in my backyard beeyard, it appeared that hive R had a drone layer. I saw the queen. She looked fine, large and plump; but all the capped brood I

could see were drones, bullet shaped. The pattern was shotgun. Not solid. When I communicated my findings to Wil Montgomery, a Georgia Master Beekeeper, and asked what he thought of putting a frame with very young larva in R to see if the bees would supercede the queen, he volunteered a frame from one of his hives. He has some hives in a yard that are closer to me than my outyard. Of course I said, "Thank you."

Have you ever worked bees with a six-year-old who has been watching you since he was two years old and already knows everything about beekeeping? Have you ever even thought about being out in the beeyard with a six-year-old? Let me recommend right here that you give this matter some serious thought before you hear, "Grandpa, can we go work the bees?"

Late on a Tuesday afternoon my six-year-old grandson, Jonathan, and I went to Wil's yard to get a frame with very young larva. Wil told me



GRANDSON, JONATHAN DEMPSEY CHECKING THE HIVE



Jonathan wiring a frame.



Jonathan with a frame.

to get the frame from the third hive from the left as you stand behind the hives. He said, "The queen is on the fourth frame from the left, on the west side of the frame, in the lower left corner." I was impressed until I got to the hive and saw that it was a double deep. Well, here we are with the hive open and there is no brood to be found in that hive. So, I checked another hive.

"Jonathan, stand behind the beehive. Stand back here with me. Jonathan, Stand... Behind..the..Bee..Hive..STAND RIGHT HERE!"

So, I am looking through the second colony for a frame with very young larva. There is a nice pattern of capped brood. There is some uncapped brood around that. Ah! There is some very, very small larva. I don't see all that well around 4:00 PM in February. I cannot see the right aged larva. All I am really seeing is the glistening royal jelly at the outside edge of the brood pattern.

"Jonathan, that's enough smoke...Don't puff any more smoke... Don't puff any more smoke on me... Jonathan, GIVE ME THE SMOKER!"

I had a hot, damp towel in my traveling nuc, the one with the hinged lid and the carrying handle, and a frame of drawn comb to swap for the frame of brood. I shook the bees off the brood, wrapped the frame with the towel, and carefully placed the frame in the nuc.

That's Jonathan with a frame he has removed from a colony.

"Jonathan, I have what I came to get. We don't need another frame. Put it back in the hive. Jonathan, put

the frame back in the hive! Bring the smoker. Where is your hive tool?"

At my backyard beeyard, I plan to put the frame with brood in the middle of R. I usually run nine frames so there is a middle frame.

Standing next to a colony about three hives away, Jonathan says, "Grandpa, there's a bee in my hat."

Much too casually, I glance in his direction and carelessly say, "It's on the outside."

In exactly the same voice with no change in tone or inflection, Jonathan says, "Grandpa, there's a bee in my hat."

Now, I cannot be cavalier about this bee. So I walk over to him; and, sure enough, there is a bee crawling up the inside of his veil right in front of his face. I stretched the elastic around his hat, and she flew right out. He did not say another word. I know and you know beekeepers that would have a conniption fit if a bee got inside their veil. This six-year-old boy just stood there and expected his grandfather to do something about the bee in his hat. I've got to get this worked out because Jonathan has two younger brothers that already want to know when it will be their turn in the beeyard.

By now it is almost too dark to see anything. I removed one of the outside frames, which was empty and had almost no bees on it, slid four frames over, and carefully inserted the frame of young larva in the middle. Then I stacked the hive back together. You're right! I should have dismissed that drone-laying queen. Live and learn.

One day in June as I was un-

loading my truck, my wife came out to tell me that our neighbor called to say that my bees were in his dogwood tree. Of course, they were my bees. I saw them leave and fly off into the west. Sometime in July, Jonathan and I went over to my outyard to check on the nuc that I set up from that small swarm I had collected off my neighbor's dogwood tree. On the drive over to check on this nuc, Jonathan and I were discussing the rock band he will have when he gets big. Right now, he wants a colony that is his colony. I guess I'll have to set up something that he can call his own. We found and marked the queen. I'll know in a few weeks if they supercede her. On the way home, Jonathan tells me that when he grows up, he wants to keep bees in the daytime and play rock concerts at night. I guess he has this all figured out.

Last Christmas, Jonathan's grandmother persuaded me to give him a beehive. I told her that I was not going to paint his hive. I would rather get a root canal than paint. He did put on the primer coat. I ended up doing the two coats of latex. He had to have a different color so we would not confuse his hive with mine. You got to hand it to him; he is thinking.

The first swarm I caught in March went into Jonathan's hive. He already has plans for the money he is going to make selling his honey. There is still some work needed with the concept of purchasing jars and lids.

Jonathan went with me to HAS 2007 in Frankfort, Kentucky. He was pleased to be able to respond to the question, "So, how many colonies do you have?" with an unequivocal "One." I had planned to demonstrate wooden frame assembly and cross wiring. I assembled only one frame, and then Jonathan took over. I could not suppress the swelling of pride as so many much older beekeepers watched in fascination as this eight-year-old nailed together frames. He went to the open hive demonstration on his own; but his report back was, "It was interesting, but the man used too many big words that I did not understand." We've all been there.

He still needs to work on keeping up with his hive tool. Do any of us have this perfected? **BC**

Lonnie Funderburg is still looking for that errant hive tool, but has lots of good help with his bees in Oneonta, AL.

Bees & kangaroos

Apimondia 2007



Ann Harman

"G'day." And so the Australians welcomed almost 2000 beekeepers from over 100 countries to the 2007 Apimondia Congress in Melbourne, Australia, September 9-14. The United States beekeepers were well-represented, American bee scientists were there, too, to give presentations on a number of topics, including current news on CCD.

Just a few notes on Australia. The people are friendly and willing to help confused visitors. The cars are kind to pedestrians – vehicles really do stop to let you cross a street at a marked crosswalk. The cities and countryside are clean and free from litter. The east coast of Australia looks similar to the east coast of the U.S. – miles of beaches, rolling farmland and some low mountains. The big cities are on the coast since the center of the country is basically a desert. Weather during the congress was typical Spring, pleasantly warm, with a few spring showers. The jonquils were blooming. Although the grass was green, Australia is experiencing several years of serious drought. Evidence of forest fires was apparent in the eucalypt forests. Yes, kangaroos can be seen eating grass in the pastures and jumping around with great long leaps.

The Congress officially begins with the Opening Ceremony on Sunday night. The beekeeping industry in Australia was grandly introduced with a video. Like the U.S., Australia has hobby and sideliners beekeepers, and about 2000 commercial operations. They have migratory crop pollination with a value of \$A1.8 billion. Since *Varroa* has not yet arrived in Australia no miticides are used, so Aussie honey has no residue problems from these chemicals. The eucalypt trees are the source of much of their 30,000 tons of honey per year. The beekeepers need the public lands

with the eucalypt forests to realize this large production, but otherwise have no government intervention in their industry. They do have the Australian Honey Bee Council, however, made up of pollinators, packers and producers.

The video was followed by brief welcoming speeches by Apimondia President Mr. Asger Sogaard Jorgensen of Denmark, the Presidents of the seven Standing Commissions, and the Australian chairman of the congress.

The best place to meet the rest of the beekeeping world is in the vendor's exhibit hall, known as ApiExpo, with booths from vendors in the U.S., Mexico,

China, Korea, Ukraine and many other countries. There's equipment to see and you can place orders, taste honey, and sample hive products. Some of the booths had souvenirs with badges or pins to remind you of Apimondia and Australia. Since the next congress, will be in France in 2009, the French booth was entertaining its visitors with French wine and gourmet snacks. Although serious business was being done with the vendors, music and dancing seemed to appear spontaneously at various booths.

The program format for Monday through Thursday included sessions on bee health, bee biology, apitherapy, beekeeping in developing countries, pollination, technology and equipment, and beekeeping economy. Because the daily sessions

were concurrent you had to go from one lecture hall to another throughout the day to cover all the talks you wished to hear. In addition to the lectures, numerous poster sessions were held with the authors present to answer your questions. Abstracts of the presentations are published in the congress handbook so you could get some information about that topic and perhaps locate the speaker.

Beekeepers like to visit other beekeepers, so the Friday of each congress is set aside for chartered trips to visit local beekeepers. (They finally quit doing it mid-week.) Each tour bus has a guide to explain what you are seeing on your way to the apiaries. Lunch often features traditional foods so that you finish the Congress with a good picture of the host country.

In addition to the Friday tours, each Apimondia offers pre-congress and post-congress tours that give attendees a chance to see the host country's attractions and scenery. Usually some beekeeping is part of the tours.

Each congress also has Contests and a Honey Show. The Honey Show has classes for extracted and creamed honey, beeswax, beeswax candles and art, and a commercial display of twelve containers of honey. The Contests consist of a multitude of classes for books, websites, journals, inventions and more (see sidebar). The largest number of entries is found in the magazines, books and photography classes.

This year *The ABC & XYZ of Bee Culture* won a gold medal for books, our *Bee Culture* website won the silver medal in that category, and *Bee Culture* itself won the bronze medal. The medals and certificates were presented at the Wednesday evening Awards Ceremony.

Evenings at Apimondia are busy with a variety of scheduled events. The Opening Ceremony on Sunday





Apimondia President Asger Sogaard Jorgensen of Denmark, presents Ann Harman the gold medal for ABC & XYZ.

included refreshments at a reception and France, hosts for 2009, presented their French Night Monday evening. A video showing the sights of southern France and the area around Montpellier tempted the participants to attend the next Apimondia. Montpellier is very close to the Mediterranean and is both beautiful and historic, and after the video refreshments reflected fine French cuisine.

The Aussies were in fine form on Tuesday night – the Cultural Evening. Their show opened with a greeting ceremony performed by a group of aborigines, followed by traditional songs performed by an enthusiastic bush band. A storyteller brought laughs and their famous whipcracker demonstrated his talents. The program concluded with songs by their renowned Young Girls Choir.

The Awards Ceremony Wednesday evening attracted a large crowd, as does The Closing Ceremony on Thursday night when the winner of Apimondia 2011 is elected and announced.

Prepare now for Apimondia 2011 in Buenos Aires, Argentina. The Argentinians have campaigned for eight years to host this event and their delight at succeeding, finally, was evident. Argentina is one of the largest honey-producing countries of the world and Buenos Aires is a popular tourist location. Beekeepers and non-beekeepers alike will be looking forward to the congress four years from now.

40th APIMONDIA - AUSTRALIA 2007 APIMONDIA CONTEST AWARDS

CATEGORY 1. Technical inventions in beekeeping:

Gold: Monitor Hive, Eric Whitby, NSW, Australia
 Silver: Bee Bread Extractor, Tentorium Apicompany, Russia
 Bronze: Royal Jelly Extraction, Karl Jenter, Germany

CATEGORY 2. Innovative use of products from the beehive:

Gold: Pollen/protein powder, Wang's Bee Gardens, China
 Silver: Water Soluble Propolis, Glen Heaven, USA
 Bronze: Tavener's Ale, Lindsay Bourke, Tasmania, Australia

CATEGORY 3. Promotional packaging:

Gold: Soft drinks, Tentorium Apicompany, Russia
 Silver: Leatherwood Honey, Ewan Stephens, Tasmania, Australia
 Bronze: Royal Jelly Box, Yuanshang Gong, China

CATEGORY 4. Films, videos, CDs on beekeeping:

Gold: Instrumental Insemination of Honey Queens, Susan Cobey, OH Univ.
 Silver: Carniolan Bee, Franc Sivic, Slovenia
 Bronze: Beekeeping Library, Dr Nizar Haddad, Jordan

CATEGORY 5. Slides, photographs on beekeeping subjects:

Gold: Bees on Flowers, Franc Sivic, Slovenia
 Silver: Rafter Beekeeping in Cambodia, Claire Waring, UK
 Bronze: Peter Kaczynski, Victoria, Australia

CATEGORY 6. Books: (Due to the large number of high quality books entered this category was subdivided into three sections):

6.(a) Beekeeping books:
 Gold: *ABC & XYZ of Bee Culture*, Root, USA
 Silver: *Beekeeping in Practice - Part 2*, Lauri Ruottinen, Finland
 Bronze: *AgSkills - Beekeeping*, Doug Somerville, NSW DPI, Australia
 Bronze: *The Bee Book*, Peter Warhurst, Queensland DPI, Australia

6.(b) Technical books:

Gold: Pair of books - *The Honey Bee - Around & About*, and *The Honey Bee - Inside Out*, by Celia F Davis, Bee Craft, UK
 Silver: *Fat Bees Skinny Bees*, Doug Somerville, RIRDC Publication.

Bronze: *Practical Pollination Biology*, edited by Dafni, Kevan & Husband, Canada

6.(c) General interest books:

Gold: *The Great Atlas of Melliferous Plants*, Zbigniew Koltowski, Poland
 Silver: *der honig Kuch Buch*, Remy Bintener, Luxemborg
 Bronze: *No Fear of Bees*, Heinrick Gritsch, Austria

CATEGORY 7. Didactic materials:

Gold: *Bee Craft Apiary Guides*, Claire Waring, UK
 Silver: *Marion Weatherhead*, Qld, Australia
 Bronze: *Rubber Stamps*, Tetyana Vasylykivska, The Bee Farm "Medyana Rosa", Ukraine

CATEGORY 8. Beekeeping collections:

Gold: Postage stamps, Mykola Tshchuk, Ukraine
 Silver: *Beekeeping Music*, Tentorium Apicompany, Russia
 Bronze: *Quilt*, Shirley Stephens, Tasmania, Australia

CATEGORY 9. Apicultural journals: (Sub-divided into two sections)

9.(a) Beekeeping journals:
 Gold: *Bee Craft*, UK
 Silver: *Deutsches Bienen Journal*, Germany
 Bronze: *Bee Culture*, USA

9.(a) Scientific journals:

Gold: *Journal of Apicultural Research*, IBRA, UK

CATEGORY 10. Beekeeping websites:

Gold: *Bee Craft*, UK www.bee-craft.com
 Silver: *BeeCulture*, USA www.BeeCulture.com
 Bronze: *Bee Research Unit*, Jordan. www.jordanbru.info

CATEGORY 11. ApiExpo stands:

Gold: Zip Technologies, Brotherhood of Ukrainian Beekeepers, The Bee Farm "Medyana Rosa", Ukraine
 Silver: Argentina
 Bronze: Charles Blue Hills Honey, Tasmania, Australia

APIMONDIA SONG or MUSICAL TRIBUTE TO APICULTURE:

Special competition, entries invited by Asger Jorgensen, President of Apimondia, at Apimondia 2005 in Ireland.

Two entries received and both awarded gold medals: Tentorium Apicompany, Russia - "Apimondia Song" Igor Krivopalov Moskin, Russia - "Bee Heaven"

If your spouse or a friend would like to join you on an Apimondia visit, but think they might be bored with bee lectures there are programs given specifically for them. Recall that they are welcome to visit the vendors at ApiExpo, where hive products are featured at many booths and these have a universal appeal. The Opening and Closing Ceremonies and Receptions plus the Cultural Evening and Technical Tour all day Friday are available, plus at least another tour during the week is especially designed for an accompanying person. This sightseeing tour is sometimes all day and is definitely worthwhile.

It is impossible to list all of the topics of the presented papers or even all of the exhibitors at ApiExpo (but they are listed on the web page

at www.Apimondia.2007). Everyone with Internet availability can visit www.apimondia.com to keep abreast of forthcoming congresses and other information.

So it's time for the Aussies to say "G'day" and for the congress participants to return home. Yes, whether saying "hello" or "goodbye" you simply say "G'day."

Now it is time to learn to say "Bon Jour" in preparation for your visit to Montpellier, France, for Apimondia 2009. Get out your piggy bank and start saving to attend your beekeeping meeting of a lifetime. You and your bees will be glad you did. **BC**

Ann Harman was one of the main editors of ABC & XYZ and was honored to accept the gold medal at Apimondia.

What I Learned At EAS!



Nancy
Tozier Sieling

Most beekeepers attend the Eastern Apiculture Society (EAS) Annual Conference to learn and talk about the lives and habits of bees. This year I attended EAS with my husband, somewhat reluctantly, as this beekeeper's wife does not find bee science real interesting. After looking over the program book listing the classes and workshops, I opted to attend several that focused on value added products and marketing. A common thread ran through these presentations – being a beekeeper doesn't mean you have taken a vow of poverty. Creative marketing can boost your profits. I went home with copious notes and many new ideas to process.

So on a recent weekend we set up our booth at the annual outdoor show in our hometown, eager to try out our new products and marketing plan. We awoke to terrible weather. The frosty morning evolved into a cold, windy day with occasional rain showers. The crowd – well, there wasn't a crowd, just sporadic clusters of die-hard festival goers. We almost went home before we even set up, as some of the vendors did, but ultimately

opted to give it a try. The vendors on our left did a bang up business in hot drinks and deep fried cookies. Everyone wanted to get warm. The sellers of Autumn silk floral arrangements to our right sold nothing.

Despite the adverse conditions, we made almost twice what we made at the same show the year before under ideal conditions. The EAS marketing gurus were right. We went home, smiling, to count our money. Here are several principles we learned at EAS and put into practice.

If you have more products for sale, you will reach more people.

We had honey and beeswax for sale like we always do, but this year we added eight varieties of honey sticks. We made creamed

honey, two varieties of beeswax based hand lotion, honey jelly and honey breads. Since we grow pumpkins and gourds, we brought some along.

The honey sticks sold themselves. Parents bought them as snacks for their kids. One man noticed our display from the other side of the field and made a beeline for us. He picked out 20 honey sticks and handed us exact change without a word. While he was making his selections, his wife explained that they were his favorite snack and he was always on the lookout for them at fairs and festivals. Other customers wanted one of each





variety. The pumpkins and gourds attracted a number of grandparent and grandchild pairs, who often left with more than just a pumpkin. We sold some of every product we brought.

Give potential customers the opportunity to try your products.

We had test bottles of our lotions out, and offered samples of creamed honey for customers to taste. Creamed honey is not well known in our area, but once people tasted it, they bought it. We sold all but one jar, even though we priced it at twice the price of our regular honey. Honey jelly – particularly the raspberry flavored variety – was also a surprisingly good seller.

Don't skimp on labels and packaging.

Yes, packaging costs money, but it more than pays for itself. Your product can be better than the one sold at the store, but if it doesn't look the part, no one will believe it. When you are grocery shopping, look for labels that appeal to you. The gourmet and specialty food aisles often feature some beautifully packaged foods. If your cell phone has a camera, snap



pictures of the ones you like for future reference. Search the internet for packaging products and labeling ideas. There are many reputable companies out there. We opted for two colors of lotion bottles (to visually separate the varieties) and used our computer to design the labels. We also chose this time to redesign our honey labels. Consistency in style and fonts across your product line creates a professional look. Invest in computer printable weatherproof labels. Before I went to EAS, I did not know they existed. Yes, they cost more, but you won't have to replace labels that have run or bled, because that won't be a problem any more, and your jars will always look great. If you are not comfortable designing a label, purchase your honey labels and spring for custom printing. Be sure to add the cost of the packaging when you price your products.

Create a neat, clean, and attractive display.

If you have a tent or canopy, set up your tables in a way that invites potential customers to come inside and browse. Make your space a sanctuary from blazing sun or chilly winds. The pumpkins and gourds we brought to sell were washed, sorted and displayed in baskets. They were located along the sides of the display table, where customers would not trip over them. They helped make our booth more attractive, and we sold a number of them. Make large, easy to read signs, and post them in several places. Mark prices on your honey jars. We offer customers a brochure containing facts about bees and honey. We also give out a free recipe brochure containing honey recipes. (Make sure you have tried the recipes before you offer them to customers.) Both brochures include

contact information, so customers will know how to find us when they need more honey.

Make it easy.

We priced Honey Sticks at 4/\$1, honey, wax, and other products in even dollar or quarter increments, and the lotion price includes the tax. Even dollar amounts make it easier for everyone. Have plenty of ones on hand.

Look and act like a professional.

Wear shirts or aprons that identify you as the honey vendor. The weather forced us to don layers of sweatshirts over our yellow tee shirts, but we still wore our matching blue aprons. *Stay on your feet.* Look potential customers in the eye, and smile! Don't make excuses about prices or products. Be honest, informative, and take pride in your work.

Don't undersell yourself.

You are not a big box retailer. You invest a lot of time and individual attention in your products, and people know that. Anyone with taste buds knows that what you sell is not the same as the honey available at the grocery store. Yours should be priced higher, and most people will expect that. Check Bee Culture's honey report monthly for current honey prices in your region.

Final thoughts

If you don't want to make value added items, purchase them in bulk and resell them under your label. Betterbee, for example, carries creamed honey, honey sticks, pollen, lip balm, candles, soap and other items as well as packaging just for this purpose.

Adapt these ideas to your personality and business. Not everyone will want to carry lip balm or soap. There is no magic bullet, but neither is there a need to take a vow of poverty. **BC**

Many thanks to Joli Winer, Cecil Sweeney, and Landi Simone for sharing their knowledge and skills at EAS in August 2007. Next year's EAS meeting will be at Murray State Univ., in Murray, KY. Check out www.EasternApiculture.org for more information.

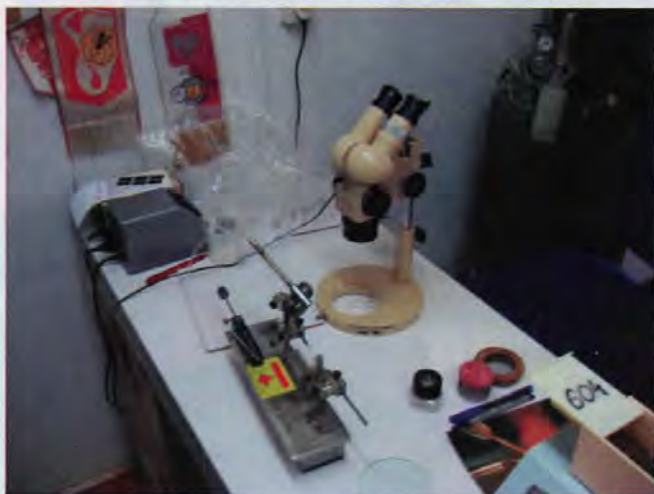
Nancy Tozier Sieling adds value to her family's honey bee products, and keeps her husband, Peter busy in the beeyard from their home in Bath, New York.

VISITING A POLISH QUEEN & MUSEUM BUSINESS

Jim Metcalf

He sits leaning on his cane at the entrance to the beeyard. The path climbing up the hill goes by him so no one gets past without his pleasant glance and welcome. I appreciated his quiet greeting as I recall the pleasure of sitting in my apiary enjoying the world flying by. The log hive is one of many unique hives in this hillside beeyard. This is Barc Apiary in Kamianna, Poland, run by Jacek and Emilia Nowak. We spotted Jacek, further up the hillside in the middle of a talkative group of school children. We did not even have to hear him to know that Jacek is a beekeeper's beekeeper. The children loved his explanations and kept asking all those questions that we are asked when we do school or club talks.

What brought us here from New England to the mountains of Southern Poland to meet Jacek Nowak and visit his apiary, hive museum and queen rearing operation? Our family, including my grandmother, arrived in the U.S. in the late 1800s from the little farming town of Szczucin in the state of Malopolska, Poland. Since she had much to do with raising me, I jumped at a chance to



Instrumental Insemination area is clean and well organized.



visit family in Poland and search for a little of her past. We found her church and the home where she was raised. We also found that some of our ancestors were beekeepers as the home had been surrounded by 40 or 50 hives in the past; this may be some of the reason that I became a beekeeper – it is in my blood.

This discovery caused us to want to see what beekeeping might have been like when my grandmother lived here, and Mr. Nowak's apiary in the little town of Kamianna was recommended. We took a bus to the town of Labowa, and from there we found a driver to take us the last few kilometers to the village of Kamianna. This is beautiful mountainous ski country and we fully expected to see Julie Andrews dancing and singing across one of the hillsides.

The apiary is on a hillside behind a church where Mr. Nowak's father had the job of curator. The church has painted bees above the altar and was dedicated to villagers who were driven out of the area by Russian ethnic cleans-



The restaurant on the first floor and the rooms on the third floor were all sparkling clean.



Jacek Nowak in his vest and hat.

ing just after World War II. In fact Kamianna has become a beekeeping village, and Jacek Nowak keeps well over 2000 hives and a sophisticated queen rearing operation.

Mr. Nowak welcomed us as fellow beekeepers and offered to show us his entire operation. We visited about two weeks before the queen rearing operation moves into high gear, but his staff was already preparing the frames for the queen cells and grafting. Jacek invited us into his laboratory to show us his insemination equipment. His desire is to select for a pure strain which will withstand

the local, long cold Winters and build up rapidly in the Spring before the short honey season. His hive losses are minimal and his honey crop is substantial which support his management methods.

He inseminates breeder queens and tracks their traits and performance with detailed record keeping. He grafts by taking eggs rather than larvae from select colonies. As he said, he does not have all the answers but by following strict scientific procedures within a super clean operation and documenting his progress, he has been able to greatly improve his stock as well as the hives of those who buy his queens.

In our estimation the focus on super clean was an understatement. Following the visit to the laboratory, Jacek took us to a new three story building which houses his extracting and bottling operation for hives at this location. He maintains separate extracting and bottling facilities for each of his other beeyards. This facility is immaculate and much cleaner than any similar facility that we had ever seen. In fact, this building would rival many medical treatment facilities. The entire structure is concrete with tiled walls and floors. His staff has to enter through clean rooms where they shower and change their clothes into clean uniforms before entering the extraction and bottling rooms.

The structure is built into the side of a hill with the extraction and bottling rooms occupying the second floor. As a result, trucks delivering supers or picking up bottled honey are able to use same level docks. The layout is a well planned U-shape configuration where a truck can unload at a dock which connects to a hot room. The extraction room is next, with a bottling room adjacent to that. Finally, back out the second portion of the U with a packing facility. All needed supplies are in rooms adjacent which eliminates the clutter sometimes seen in this type of operation.

Mr. Nowak takes immense pride in the fact that he supplies the Vatican in Rome with honey from this Apiary. This practice began during the time of Pope John Paul II when Mr. Nowak presented a gift of honey to this famous Polish Pope.

The first and third floors are super clean as the second floor laboratory and honey processing facilities. However, these floors house very different activities. The third floor contains a few hotel type rooms which are in demand by skiers and Summer tourists. The rooms are immaculate, and the cost is reasonable at less than \$25 per night. If you visit, be sure and ask for room 25 which has an outstanding view of the beeyard housing the collection of historic and novelty hives.





Next, we visited his beautiful restaurant on the first floor of the building for a toast of mead and a delicious lunch of pierogis. Hotel guests can enjoy full meals in this restaurant. It should be no surprise honey is featured in many of the delicious offerings.

If you visit, be sure to ask Jacek about the collection of uniform hats which decorate the walls. His passion is beekeeping but his hobby is collecting all types of military and uniform hats.

As we walked out to the yard past a carved statue of St Ambrose, Jacek had to show us an old self cleaning hive which we found fascinating. The brood chamber is built in the shape of a V with the entrance at the very bottom of the V. Inside the brood chamber are placed frames which look like up side down trapezoids to conform to the shape of the chamber. Normal Langstroth honey supers are placed over this brood chamber. The theory is that all debris and mites will fall to the bottom of the V only to be swept out of the hive by exiting bees.

There were too many shapes and designs of the hives to show in this article. However, we saw windmills, to naturally occurring log hives, some common log hives stood on end with straw tied together to form a roof. Others had a face or design cut into the side of the log. Even the plain box

hives are painted with bright colors.

We thoroughly enjoyed this visit to a wonderful apiary where we learned much about historic and current Polish beekeeping. We learned about the benefits of working in a clean environment, and documenting changes in our bees with an emphasis on quality improvement in hive production.

Poland is a strong beekeeping country with excellent beekeeping support programs. In addition the country is very beautiful and the people friendly. If you ever have the chance to visit, I would advise you to

spend some time at the Barc Apiary in Kamianna Poland run by Jacek and Emilia Nowak. They are among the best beekeepers you will ever meet. They are located a short ride south-east of Krakow in the mountains which border the Czech Republic. If you cannot visit in person, you might enjoy visiting the web site for the Barc Apiary at www.Kamianna.pl. **BC**

Jim and Sandy Metcalf are beekeepers, world travelers, and free lance writers whose home is in North Brookfield, Massachusetts.

HARRELL & SONS, INC.

Three Banded Italian Package
Bees and Queens

P.O. Box 215 Tuskeena St.
Hayneville, AL 36040
PH. (334) 548-2313 (334) 548-2262

MAXANT
WORLD'S FINEST STAINLESS
STEEL HONEY PROCESSING
EQUIPMENT

www.maxantindustries.com
sales@maxantindustries.com
978.772.0576

MASSACHUSETTS - USA

WORLD
FAMOUS

Long Creek Apiaries, Inc.

Caucasian, Italian, Russian, & Carniolan
Package Bees and Queens

3223 Long Creek Rd., Parrottsville, TN 37843
Phone: 423.623.2345 Fax: 423.613.4567
Email: longcreekbees@bellsouth.net

Shumans
Apiaries, Inc.

949 Bill Morris Rd.
Baxley, GA 31513
912.367.2243

ITALIAN QUEENS
& PACKAGE BEES

Honey Bee Research

WHAT WE DO & WHY

*Research is complicated and expensive.
Here's why.*

Jennifer Berry

Over the years we've all heard the rumors and read the comments about the corporate sponsored research conducted at universities here in the states; how research labs are funded by drug companies and therefore corrupt their own research; and how results are tainted to favor the interests of those paying the big bucks. In fact the perception still exists that professors and researchers actually laze around in seaside cabanas, drinking high priced bourbon, smoking Cuban cigars, discussing (in their best Old English Shakespearean accents of course) the latest on just how "the expression of the MRJP1 protein found in royal jelly and caffeic acid phenethyl ester derived from propolis may just possibly inhibit the reduction of pro-inflammatory cytokines by activated macrophages." Meanwhile, beekeepers are losing colonies left and right because the uninterested university types are too busy living the high life off the backs of the taxpayers. It's interesting how this kind of information can eventually become fact to some people.

Let me shed some light on the reality of the situation. Let's begin with the money trail and my experience here at the University of Georgia bee lab.

"Show me the Money!" Each year the bee lab receives a small allowance from the University of Georgia's entomology department, in the neighborhood of a few thousand dollars. This pays phone, electric, and water bills here at the lab. It is also used for some gas and

repair expenses for our two state vehicles (1989 GMC, 1995 GMC). This money is divvied out from the College of Agricultural and Environmental Sciences to individual departments. Lean years, like those experienced lately, mean less money. The College of Agricultural and Environmental Sciences receives money each year from the state. This amount is determined by the state legislature. That's where the dean of the college comes in. Deans are political advocates for their particular College and hence the university. They spend a large portion of their time rubbing elbows with politicians in order to keep money flowing into their institution.

From time to time some federal money will trickle directly to certain departments. This is called Hatch money. It is usually earmarked for salaries to pay state employees like myself. However, sometimes there's money left over which buys a new copier for the department or replaces old computers for students and staff. Now, once in a blue moon a lab or department will be awarded a one-time gift from the state. In 2000, Dr. Delaplane was awarded money in order to build the lab I work in now.

Since we are located off-campus, we don't fall under the umbrella of the university building maintenance and janitorial services. All repairs and upkeep to the lab are our responsibility. When the AC goes out, we pay for it. When the walls need painting, we paint them. When the landscaping needs trimming, we trim it. There are also numerous items which we use on a daily basis that the lab supplies - things like computers, printers, books, tables, chairs, trash cans, cleaning products, toilet paper all come out of our budget. Lab supplies such as microscopes, dissecting tools, optic lights, alcohol, liquid nitrogen, CO₂, balance scales, Pyrex ware, sampling jars, freezers all come out of our budget. Hive tools, supers, queen excluders, frames, sugar syrup, bottom boards, lids, wax paper, pollen, foundation, hammers, nails, glue guns, drills, screws, queens, all come out of our budget. Hourly employees and graduate student assistantships come out of our budget as well. Gas and wear and tear on our state vehicles driving to and from experimental apiary sites come out of our budget. Travel to and from local and state meetings come out of our budget. This is just like any business but with one BIG exception - we don't sell anything. Therefore, we don't make any money. Hence we have to beg or borrow every cent we have to spend.

So, if the department isn't paying and the college isn't paying and the university isn't paying for the lab



Equipment purchased and assembled for research.



Equipment ready for bees.

to operate on a day to day basis, then who is? Ha, the money must be coming from big corporate drug companies, right? Well, actually no.

The majority of our money comes from competitive federal grants. In fact, since my tenure here at the lab we have had only one corporate sponsored grant. A company asked us to test a product which would possibly enhance the attractiveness of flowers to honey bees. We received \$2000 for the project which didn't even cover the labor expenses needed to test the product in the field. We've also received research money generously awarded to our lab from the Georgia State Beekeepers Association for various projects that their board of directors felt were credible. Plain and simple, we would not be able to function as a research facility without grant money.

Each year the granting agencies publicize research agendas and the amount of money available. Therefore they dictate what research will be conducted for that particular year. Scores of proposals will be submitted for consideration with most of them not making the first cut. This can be extremely disappointing because writing a grant is no picnic. It can take months to properly prepare and submit a proposal.

If you are lucky enough (and good enough) to be awarded a grant it can take months before the check arrives to the university. Then depending on how the grant is worded there may be stipulations stating that the university receives 15-20% (or even more sometimes) off the top for overhead. Oh, and one more thing, when the government needs to make cuts to federal programs, guess where the cuts begin.

Here's a conservative scenario. A three-year research proposal submitted for 2006 with two other institutions with a budget of \$100,000 becomes a \$90,000 grant for the 2007 fiscal year. After the three-way cut and the university's take, this leaves \$24,000 to fund a project for three years; labor and supplies not included. The next time you hear about all this "easy money" the government gives to research, think again.

Beekeepers often ask why it is that research takes so long. Let's look at the research aspect of the equation. Honey bee research on average takes several years, especially field research. The actual steps vary from project to project but here are the fundamentals. First an experimental design is created to test a hypothesis. Then funding attempts are made. Next equipment, bees and personnel must be conscripted and put into place. Then data needs to be collected and analyzed. If the data is worth reporting, a peer-reviewed paper is written and submitted. Extension personal then disseminate the information at local, state and national meetings. Our experience here at the lab has been on average two to three years from start to finish.



Bee packages acquired from university hives awaiting assignment.



Grafting our own queens for experimental use.



Experimental colonies on their way to the cotton fields.

Let's start with designing the experiment. Research is the pursuit of causality: cause and effect. We want to pin down causation hence we design an experiment which will hopefully answer the question we seek. In order to pursue this answer, treatments are assigned. Treatments denote the different procedures whose effects will be measured and compared¹. Here are a few examples of some pretty straightforward treatments we've used in the past: screened bottom boards-solid bottoms, small cell-conventional cell, old comb-new comb, resistant queens-non resistant-queens, isolated apiaries-non isolated apiaries, and nematodes-no nematodes.

In order for the conclusions of an experiment to be as accurate as possible, replications must be included as part of the initial experimental design. Research only examines a sub-set of an entire population. For example, we could not possibly examine every colony in every county and state. Therefore, an appropriately designed project requires as many replicates as physically and financially possible. By replicating, the experimenter increases the likelihood of detecting differences between the established treatments and at the same time decreasing experimental error. Experimental error includes all types of extraneous or unmanaged variation. Experimental error must be taken into account or the conclusions drawn may be false. Results of an experiment may not only be affected by the action of the treatments but also these outside sources which can alter the effect being examined. Natural sciences, especially field studies, are full of experimental error. Climate difference from year to year is an example of experimental error. That is why one must replicate over both time and space.

Another issue to consider when designing an experiment is how uniform are the experimental units being examined. The best way for me to explain is through an example.

For grins let's say we want to test a new concoction which has been flaunted as the next best thing for *Varroa* mite control. We have two colonies in the back yard that seem perfect for the project. We pour the potion into colony one but not into colony two. Two days later (as advertised by the producer of the product) we return and collect data on mite populations. Colony one we examine 100 cells of *worker* brood for mites. We find that colony one is completely void of mites. Excellent! The next day we return and count mites from the colony two. We examine 100 cells of *drone* brood and discover it is loaded with mites. This must mean the product works, because colony one had zero mites and colony two had lots. Well, not exactly. I realize this is an extremely simple example, but it is a good way to explain statistics.



Varroa free packages being prepared.



Examining sticky sheets for Varroa mites.

First, we didn't standardize the experimental colonies. Colony one, which received the concoction may have been mite-free from the beginning, but since we didn't measure the mite or bee populations before we treated we don't know if was the action of the concoction that caused our measurements to show no mites or not. Then, we measured mites on different days *and* in dissimilar ways – worker-drone brood. Again, we did not standardize our data collection method. If the experimental units are not the same then what we measure isn't the same, and what we find can't be compared. That is why a fool-proof design is imperative.

Collecting data is a time consuming and laborious job. Trust me – I do it for a living. If data collection isn't done right, the results of the best planned experiment aren't worth the paper they're printed on. Bottom line: research is only as good as the researcher.

Moreover, statistical results can be presented in such a way as to support any theory you desire. Hopefully, the

consciousness of the researcher wouldn't allow for unethical representation of the data, but I wouldn't be surprised if it's happened before. A great quote my dad always says "figures don't lie, but liars can figure." And there's another one I heard: "Lies, damn lies, and statistics." That is why we submit our research for peer review before it can be published. It's the scientific community's way of checks and balances. Research builds upon itself, but if the foundation is weak, that is, if bad research is depended upon, it is only a matter of time before it collapses.

See ya! **BC**

Jennifer Berry conducts honey bee research at the University of Georgia bee lab in Athens, Georgia. She is a frequent contributor to these pages.

1. Cochran, WG & GM Cox (1992) *The Contribution of Statistics to Experimentation. In Experimental Designs.* John Wiley & Sons, INC.

**USDA Selected Russian
Breeder Queens
Charles Harper
Harper's Honey Farm**

421 Louveteau Rd., Carencro, LA 70520
337.298.6261
www.russianbreeder.com

THE BEE SPACE



www.TheBeeSpace.com

**Rauchboy
Smokers Stay
Lit! They Just
Won't Quit**

U.S. Distributor of
Rauchboy Smokers



**JOIN THE REST OF THE
HAPPY BEEKEEPERS
WHO ARE FEEDING**



**LIQUID
SUCROSE!**
(SUGAR)

*Available in Midwest & Tracy, CA Locations.
Pick up or Delivery at your convenience.*

Consider the advantages of NO Granulation & Competitive Prices!

Contact us at: **DAKOTA GUNNESS**

Toll Free: 1.888.553.8393 • Fax: 1.701.553.8394 • e-mail: dakgunn@rrt.net



EXTRACTING HONEY

Part One: Handling full supers and uncapping frames.

James E. Tew

The picture in my mind

As with so many other things, before I start any project I envision a perfect world where everything goes smoothly. Honey extracting is no exception. Even though most of us already know what is involved in processing honey, when someone gives me a jar of their honey crop, it seems so safe...so clean...so easy. It never is. Someone worked very hard to get the sweet reward in that nice jar just to simply hand it to me.

If you don't know already, know this – even when everything works well, honey processing is a sticky, tricky, messy job. Try as you might, liquid honey strings and drips. That single drop seems to stick to everything. When each of us processes our crop, our realistic goal should be to keep the mess to a minimum; make the task as enjoyable as possible; and keep spills and overruns to a minimum. Thank heavens honey is water soluble.

An amazing array of choices

For many years, beekeepers have had a good selection of well made honey processing equipment from which to choose. I have visited vendors at meetings and have perused the web in preparation for this article, and am amazed at the range and extent of processing equipment available. While that is a very good thing, it does make equipment selection more complex.

Nothing is standardized

There is no standard extracting system that fits all beekeepers. Every one of you is different and keeps varying numbers of hives in areas with varying honey crop potentials. You process your crops with eclectic pieces of processing equipment that you got from here and there. Though every supplier advertises a complete

extracting “system,” few of you purchase a complete system at once.

When to add equipment and what equipment to add is a common question. Maybe you've got your Dad's old extractor, but you need a better filter. Maybe you have a functional extracting line, but the sump is not heated, if you even have a sump. Is it time for you to add a honey pump? Maybe you have a good extractor but it sits on a wobbly stand. Your extracting line – no matter how large or how small – is unique to you and can always stand some improvement.

The basic pieces of honey processing equipment

From the smallest to the largest extracting line, every system has, at its core, some basic pieces of equipment. This equipment varies from very simple to very complex

multiple articles. Second, once the bees have produced the crop, it must be removed which is another subject that could be addressed in multiple articles. But having skipped by these necessary tasks, one way or the other, you have full honey supers off and they are awaiting processing. What equipment do you need, or, more appropriately, what equipment do you want to get the job done?

Drip boards

Honey supers awaiting extraction seep or leak honey onto the floor. Not only is it sticky but after washing it away, the remaining honey residue ferments and gives the work area a sweet, fermented smell. Drip boards, which are always homemade, are nothing more than a plywood board the same size as the super (16 ¼” x 19”) with a wooden rim usually

Basic components of all extracting lines

1. An uncapping device
2. Cappings collection device (uncapping tank)
3. Extracting device
4. Filter/strainer system
5. Liquid honey storage/holding container(s)

Advanced components of all extracting lines

1. Use of drip boards for supers
2. Mechanized uncapping and frame advancing device
3. Heated cappings tank with honey drain
4. Motorized extractor
5. Heated/unheated sump beneath extractor
6. Honey pump connected to sump and settling tanks
7. Upgraded honey filter
8. Stainless steel settling tanks

First things first – the unprocessed crop

Before you can remove and extract honey, a surplus crop must be stored by your bees. Keeping bees healthy and productive is a constant challenge and a subject that requires

about 1 ½” wide and ¾” deep on the upper edges. It is very handy to have wooden spacers underneath on each end of the board to allow the use of a hand truck for repositioning stacks of supers. Drip boards catch the leaking honey and confine the potential mess



An example of a Dadant motorized small extracting system.

to the rimmed board. In a pinch, close the hand-hole in an inner cover and use this modified board as a bottom drip board. Drip boards can also be used on top of the super stack to keep out dust and wandering bees. Some beekeepers put casters or wheels on them so they can move piles of supers by pushing them.

After using drip boards, a common inclination is put them in the bee yard for the bees to "clean up." We've all done it, but I have stopped and I recommend that you do, too. It causes robbing, is a potential source of disease spread, and is extra work for you. Plus, the amount of honey is small. Hose them off and put them away.

Hand trucks

I've written previous articles on hand trucks. They are indispensable in the honey house. Get one that is heavy duty with hard rubber tires. Pneumatic tires can flatten at all the wrong times and they tend to "float and sway" under a heavy load.

Super lift

Through the years devices for lifting supers to a comfortable height have been both homemade and commercially manufactured. Essentially some kind of crank mechanism is used to periodically lift the super stack to a convenient height so stooping is reduced. If you only have a few supers, don't even think about using one. As your super numbers grow and extracting turns into a process taking several days, you might think about improvising one. There are no standard plans. The Walter T. Kelley Company carries a heavy duty super lifter that is electrically operated.

Room heat

Beekeepers frequently bring in honey after the weather has cooled or has even gotten outright cold. Cold honey is thick as cement and is nearly impossible to extract. Commercial operations will frequently have "hot" rooms where the temperature is kept in the 80s or low 90s. Designs for super heaters have come and gone. I don't know of any design that is presently available right now; however, if you try to improvise something, it is important for you to heat the honey supers slowly and only with low heat. If higher heat is applied over a short time, the combs nearest the heater will become softened and sag or even drop their honey load. Even a drip board won't help you with that mess.

How long is too long?

Once the honey is removed and is sitting in your extracting area waiting to be processed, how long can it wait? I know that we all have the best intentions, but schedules change. Certainly, extracting within a few days is the best way to go, but I have known of honey supers waiting for months before being processed (no – they weren't mine). The honey crop is reasonably stable if just sitting in comb, but several risks exist. It would be much better if the absolute minimum amount of pollen was present. No pollen at all would be great. Wax moths need protein to complete a life cycle. Without pollen, larvae don't grow to maturity, but

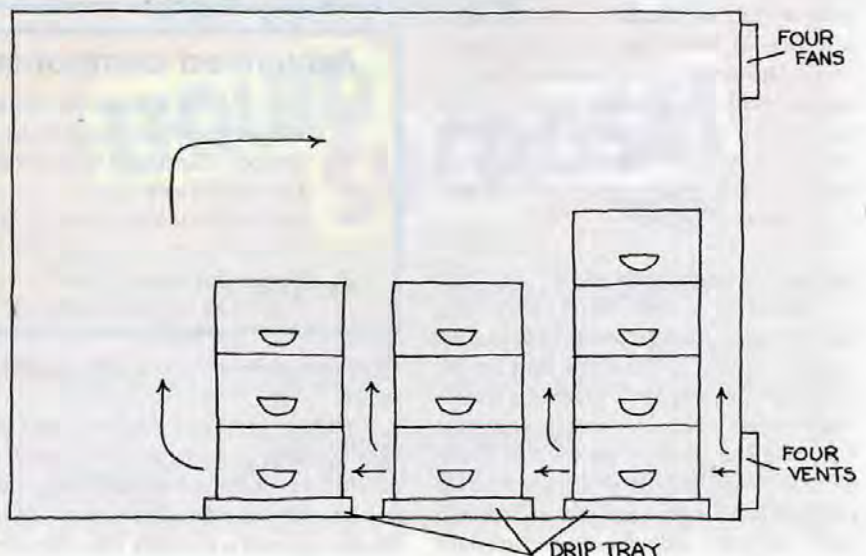
small larvae will bore holes that let honey "weep." That surface honey will ferment. In small hive beetle areas, the same is true. Boring larvae will make a slimy mess, but pollen must be present for the beetle to reach maturity. Roaches are big fans of stored honey. There is no good reason for letting supered honey wait a long time before being processed, but if it happens, all may – or may not – be lost. At the very best, extract the honey and feed it back to the bees.

Spills and overflows – they happen

There is no good place within this article to discuss the accidental spill or overflow, but you will have one sooner or later. I have an extractor in my storage facility that is bent out-of-round having fallen off its base while in operation. But for whatever reason, you someday will suddenly find honey all over the floor. Make no mistake; it is a mess – a big sticky mess. Use two sheets of heavy cardboard or plastic and, as best you can, pick the honey up and put it back into a bucket. You can probably get 90% of it, but the remaining 10% will seem like 200%.

Clean the floor thoroughly and even then I suspect that within a few days, you will notice a faint fermented honey smell. If the floor was just the regular, dirty floor – no pesticides or chemicals – the honey can be fed back to bees for their use next Spring. Honey is remarkably resilient and stable and does not readily support bacterial growth once it's back in a

HOT AIR CIRCULATION IN HOT ROOM



container or in comb. (Even so, the thoughts of eating honey taken from the floor are repulsive. At least the bees can get some use from it.) The Walter T. Kelley Company advertises an alarm that attaches to a tank to alert the beekeeper when it's full.

Uncapping the honey combs

The simple knife

Now that the first step – getting the full supers positioned – is accomplished, you are ready for uncapping. The simplest procedure is to use a kitchen knife. If that is your plan it will go a long way toward making you hate honey processing. Only the very smallest amount of honey can be readily uncapped using such a simple technique. Beekeepers of yore used two heavy knives. Before beginning both knives were heated in hot water, then one knife was used while the other reheated. As the knife in use cooled it was replaced with the reheated knife. This was somewhat of an improvement, but not much. If you absolutely must use this procedure, use two serrated-edged knives.



A hot knife and cappings scratcher from Mann Lake Bee Supply.

Hot knives and cappings scratchers

Aside from hot water early hot knives were steam heated. Now hot knives are commonly heated with electricity. This is very nearly an essential tool – even if you run a mechanized uncapper. Uncapping nice, white comb is one thing while sawing through dark, thick comb is something else altogether. A hot knife is invaluable.

While they are invaluable, they are also hot as blazes. A small adjustment screw on some electric models allows you some clumsy control over the heat level. Other more expensive units have dedicated temperature controls incorporated into the electrical supply cord. Be forewarned – you touch yourself with the hot knife – dripping with hot honey – and you **will** move quickly.

A cappings scratcher is a simple pronged tool for opening extraneous cells that get missed by the hot knife (or any other mechanical uncapper).



The uncapping plane. The blade is heated, and moved down the surface of the comb, with cappings falling below.

They are cheap and useful. In fact, but not in reality, one could completely uncap combs with a cappings scratcher, but it would be very slow and all the cappings fragments would quickly clog the strainer.

Other uncapping devices

For many years, the simple hot knife – supported by the incidental use of the cappings scratcher – was the bee industry standard. In recent years, that has changed and is continuing to change. New uncapping devices are available.

Uncapping planes

These gadgets are heated and work somewhat like a device that slices cheese. I've not used one a lot so I can't speak to their practicality. If you have experience with one and have formed an opinion, let me hear from you.

The Hackler Honey Punch

The honey punch is another uncapping tool that is new to me. Working somewhat like a paint roller, it is rolled across the comb surface and punctures the cappings with small holes. In the extractor, centrifugal force pushes the honey through the holes. It comes in different sizes and, on paper, would seem simple to use. If you have experience with one and have formed an opinion, let me hear from you.

Vibrating knives and flails

Many years ago, inventive beekeeping designers devised machinery that mimicked the sawing mowing with hot knives that beekeepers used when employing hand-held hot knives. Various models ranging from

simple countertop vibrating knives to commercial level machines costing thousands of dollars are available. The machines made by Cowan have been favorites for many years. The horizontal chain flail machines made by Dakota Gunness or the vertical chain flail uncappers made by Maxant are examples of latter day ideas. Certainly there are others.

Part II next month

Next month, I will continue at the comb uncapping stage and review uncapping tanks, extractors, pumps, sumps, and settling tanks. I will include some comments on what to do with that vintage A.I. Root extractor you picked up at an estate auction. That classic, old processing equipment just about cannot be worn out.

For your edification, I used some of the information on the following web pages:

Betterbee Inc., 8 Meader Road, Greenwich NY 12834. 800.632.3379. Fax & info: 518-692-9802. www.betterbee.com

Brushy Mountain Bee Farm., Rt 1 Box 135, Moraview Falls NC 28654. 800.233.7929. www.beeequipment.com

Cowan Manufacturing (formerly Parowan Honey Co.), P.O. Box 3205, Parowan UT 84761. 800.257.2894. www.cowanmfg.com

Dadant And Sons, Inc., 51 south 2nd St., Hamilton IL 62341. 800.637.7468. Fax: 217.847.3660. www.dadant.com

Hackler Honey Punch www.plas-tools.com/honey_punch.htm

Walter T. Kelley Co. 807 West Main Street, Clarkson KY 42726-0240. 270.242.2012 or 800.233.2899. Fax: 270.242.4801. www.kelleybees.com

Mann Lake Ltd., 501 S 1st St., Hackensack MN 56452-2001. 800.233.6663 (USA and Canada). Fax: 218.675.6156. www.mannlake-ltd.com

Maxant Industries, Inc., P.O. Box 454, 28 Harvard Rd., Ayer MA 01432. 978.772.0576. Fax: 978.772.6365. www.maxantindustries.com **BC**

Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684; Tew.1@osu.edu; www.beelab.osu.edu; www2.oardc.ohio-state.edu/beelab/

The Story Ends

NAKED COMBS, EMPTY SPACES

Larry Connor

Queens, Drone Layers, Winter

Early June

We are the hive at the north end of the hedgerow. We are waiting for a queen to emerge that was produced under unexpected conditions. Sister groups initially started many queen cells, but then they started to remove them for reasons we do not all understand. Now we have just six as we approach the time they will emerge. One candidate queen is ready but has been kept in confinement in her cell because she was too old when she was selected to become a queen. She does not produce the right odor. That leaves us with five cells of right aged candidates that will compete to become our queen and resume the growth of our colony.

The fruit bloom is over, and we are now visiting the delicate white flowers of the black locust tree. We collect the nectar as rapidly as we are able, but the weather is unsettled. There are storms with great electrical energy passing through that send us flying rapidly back to our home when they approach. Some foragers are lost because they miscalculate the distance back to the colony and the time it will take them to return. When the storm reached them they were still working the intoxicating flowers.

As the storm passes we work to process the nectar with its ideal sugar composition and light color. But as we work the air temperature outside the hive becomes much colder, and when the light appears the next day foragers report that it is too cold to go out, the sky is filled with clouds and the human is seen breathing clouds of moisture.

But later in the day the human appears with her smoke maker and opens our nest. The blast of cold air is a shock to our warm brood area, and as she searches each frame she

mutters that there *must* be eggs in the hive from the queen *she* introduced. But the bee the human gave us was not recognized as a suitable queen and was not allowed to live. The nearly mature queen cells are the method we use to replace the missing queen. We must have her laying as soon as possible so we make enough bees to fill the naked, empty combs that sit on top of our nest. If we fail, if we are unsuccessful, we will not survive the Winter.



When the beekeeper reassembles the colony we are unable to find the queen cells. Foragers return to the hive and report that the cells are smashed against a rock and the bees inside are dead. Without their special odor throughout, a great unrest begins within as we seek our queen. Then, a faint scent spreads throughout and there is one bee-that-could-

be-queen that has survived. This was the one that was kept in her cell as a confinement. She was able to escape during the confusion of the human's intrusion. One group of sisters had selected her for queen production, but she was several days past egg hatching when they selected her, and she is small and not what the older bees want in a queen. Several worker bees chase after her, but she moves quickly on the comb and they do not capture her. The human did not see her as a queen because she is short and she hid when the human moved the frame into her view. The queen-to-be produces some of the odor and taste of the queen, but in smaller amounts. It is not the odor and taste of a good queen-to-be.

Over a Week Later

We are approaching the long day, the day of the greatest amount of sunlight for the season. The queen-to-be will soon be old enough to leave the hive and go where the drones go and, hopefully, return with her body filled with the seed from the many drones she has met there. She has made her orientation flights and finds the hive entrance without difficulty.

Finally, on a bright but cloudy afternoon the queen-to-be leaves the hive to find drones. The sun falls lower into the sky as nurse bees wait for her return, but at the end of the day she is nowhere within the hive. The nurse bees search for her with growing attentiveness, but there is no queen. Many drones disappear every day, for that is normal for drones, since it is their job to move to other hives and we welcome drones from other hives into our nest for this is the way it has always been during the mating season of the hives.

The next day there is still no queen-to-be. Some of the drones

Many colonies lose queens during the year for a variety of reasons. As in this story, a failure of a queen to return from a mating flight is a possible occurrence. The initial problem here was that the beekeeper cut out the cells from the colony that was undergoing emergency queen replacement. I am always amazed by the number of beekeepers who routinely cut out all queen cells in a colony without thinking that these cells may be needed to produce a new queen! It is important to remember that not all queen cells are swarm cells, and if you do not know the status of the queen in a colony, it is better to leave the queen cells untouched and let the bees sort matters out. Research shows that some cells that appear to be swarm cells (as determined by humans by position on the frame and time of year), end up being superseded queens, and no swarm issues. When in doubt, leave the cells in the hive. Or have a clear follow-up plan.

Another frequent reason queens are lost is during and after a physical move of a colony for pollination or

honey production. Another reason, implied in the story, may be the production of a queen from a too-old larva that has difficulty mating.

Initially the human in this story misread the strength of the colony because it was so weak over the Winter and did not have adequate stores. It could not start buildup until natural food was available. Then it takes time, and is slower than a colony with great reserves of over-wintered food. While the beekeeper added a frame of honey to the hive in the later Winter, it was not where the bees could use it and the bees nearly starved. Indeed, the colony had barely escaped starvation several times in the past few months. Once the queen was able to work with the bees to build the hive's strength and resources, the human re-

DRONE

reported that birds chased them on the way to and from the mating place; others reported dragonflies. Scout bees visit other hives along the hedgerow but none had a returning queen-to-be come during the past day. Our queen-to-be is gone.

Summer Solstice

We have eggs in the cells, but these are eggs from worker bees, not from a queen. We are feeding these drones. Soon drones will be emerging. They are not able to help the colony. They are specialized only to mate. They cannot raise brood, build wax, or forage and they are worthless at colony defense because they lack the weapon.

Our colony has been without a queen for a month now and the last of her brood emerged a week ago. It was then that the worker bees started to lay eggs. But their bodies are short so the eggs are not in the center of the cells, but on the edges and sides of the cell bottoms. Without the special queen odor our nurse bees prepare few cells for egg laying, and the workers deposit multiple eggs at the bottom of each cell.

The human threw her hive tool in anger when she saw the multiple eggs in the bottom of the cells. She walked away and left us for days. Our population fell rapidly. Many days later she opened the hive and carried us on frames into the brush some distance from the hive and shook us off the frames there. In the center of the brood nest she placed a frame of young bees and eggs, taken from the colony on the south side of

the hedgerow. Oh, we are attracted to that frame. It carries traces of a queen's odor, and eggs and brood – the scents we have not experienced for many weeks.

Almost immediately a few of our youngest nurses begin to feed the newly arrived brood. They empty stored pollen from cells and quickly digest it to create the food these baby bees need. Others start building queen cells, right over these tiny larvae and even some eggs, much like we did before.

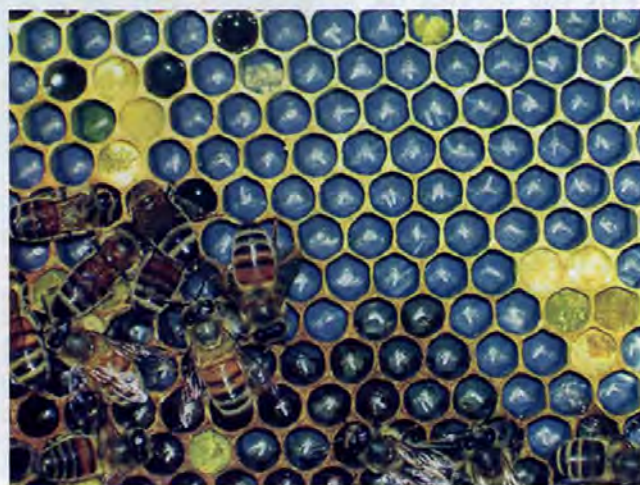
Mid July

We are filled with renewed energy. Most of us are rested and ready to help rebuild the colony. One of the queen cells produced from the added comb has yielded a vigorous new queen and she was able to avoid the dragonflies and birds and returned to the colony fully mated. For a whole day attendant bees stroked her body and removed long thin filaments of

unneded drone seed she expelled from her body, and in a few days she began to lay eggs. Almost immediately the colony has several combs filled with developing young ones.

But the nectar has slowed. The weather has been hot, very hot, and our foragers spend much of their energy flying to a distant pond to gather the stagnant water to help cool the hive.

The new queen sometimes puts two eggs in some of the cells since we just cannot keep up with her tremendous egg producing capacity. The combs above are still naked, empty of the surplus we need to provide us with Winter reserves. Returning scout bees report on fires in the foraging area as a whole Winter's worth of nectar burns in the dry heat. We continue to search for food, finding a little in gardens of the humans. There is corn, and the cucumbers, squash and gourd flowers to visit. A few mint flowers are found along the



moved her and a new queen was introduced. Perhaps the replacement queen was released too quickly, or perhaps she was never a good queen – the result of substandard queen rearing conditions and thus inadequate pheromone production.

There is a great deal of misinformation about workers that become laying workers. Since they are unmated, their eggs will all produce drones – there must be some selective advantage for colonies that pass on genes this way as the colony itself dies, for the genes live on. There are many laying workers in a hive. They appear after the brood has been absent for a week or so, or about four weeks after the queen is removed/killed.

It is the presence of worker brood that inhibits the

LAYERS

ditches. We stay alive, but we are not growing.

Early September

The human has opened our hive again and combs are thrown about. We are in dismay over her ability to disrupt the order of our colony. When we return to her version of order we find a frame of foundation separating the combs holding the young ones, and there is a cage holding a strange queen sitting on the bottomboard of the colony. We find the odor of our queen, the one just reared a few weeks ago, spread on the cage of this foreign queen.

While some of the nurse bees feed the foreign queen through the screen of the cage, some of the guard bees are alert to her strange odor, and continuously attempt to sting her through the screen of the cage. Others remove the sweet material at one end of the cage, and in less than a day we have freed that foreign queen

and the defensive bees are able to sting her.

So for the third time this season we are queenless. Nurse bees again begin the process of producing candidate queens, and by late September a lone queen attempts to mate. The weather has cooled. There is frost on the ground, and the Fall winds blow cold and strong. Our virgin queen starts to fly out every afternoon, but quickly returns. Finally, on one fine October afternoon, she reaches the place where drones go but there are no drones there. She flies to another along the flyways but cannot find a mate. She continues this several times as the declining weather allows, but no drones. Our colony has not had drones for many weeks because of the poor forage. Apparently many of the colonies in the area have experienced the same decline in conditions and have produced drones no more and the old ones have died.

development of worker ovaries, not just the presence of the queen. When both are gone it is nearly impossible to requeen a colony with laying workers. In the story the human took bees into the woods and brushed them off, but the laying workers are able to fly and this is not a valid way to solve the problem.

One method I have used to establish a queen in a strong colony with laying workers is to add a frame or more of brood. This will inhibit egg laying by the workers. Several days later you can then try to add a queen.

In the long run, it is often easier to use the newspaper method or to shake bees from a colony with laying workers in front of a hive with a laying queen, nucleus or full sized hive. The queen pheromone and brood will inhibit the egg laying, and the bees will not be lost. Equipment may be positioned as needed by this and other hives.

Finally, there are *very* few times when a beekeeper should divide a brood nest with a frame of foundation; perhaps, during the flow, and in a very strong colony.

November

The limited amount of brood from the last queen has emerged. There are not enough of us to survive the Winter, but we continue to move limited food to the brood area, hampered by a frame of foundation that we have chewed to use the wax. The unmated queen has laid a few eggs, but they are not fertilized and now we have drones when it is too late for her mating!

The human has given up. She carried our remaining numbers to the colony at the south end of the hedgerow and placed a newspaper between the boxes containing our combs. Our bees slowly mingle as they chew holes in the paper and become part of the hive at the south end of the hedgerow.

Once we were the hive at the north end of the hedgerow, a rapidly growing colony with a good queen. The human has added two queens and we killed both of them. We have raised three queens and the human has killed two of them and one could not find drones to mate. This is the end. The combs are empty. **BC**

*Dr. Larry Connor has moved to Kalamazoo Michigan to be closer to the center of his business travel, his 92-year old mother, his family and his best friend. He has completed writing his next book, *Bee Sex*, and is in the production phase of the book prior to publication. Dr. Connor offers a free Internet newsletter called *ebeebooks*. You may subscribe by sending a message to ebeebooks@aol.com and type subscribe in the subject field.*



The Honey Garden

Connie Krochmal

Combining honey bee pollinated garden crops with honey recipes. The best of two worlds.

Pears

Of all the tree fruits, pears are considered the aristocrats of the home orchard. These slow growing trees tend to be long lived.

Pear trees are available in different sizes. Standards reach about 18 to 20 feet in height, while semi-standards are somewhat smaller. Dwarfs only grow to about 10 feet.

There are two species of pears, the European (*Pyrus communis*) and the Asian (*Pyrus pyrifolia*). While the European pear is recommended for zones four through nine, the Asian is slightly less hardy – only to zone five or six.

Asian pears can vary slightly in shape from round or flat to the classic pear shape. Their flesh remains crisp even after they're picked and stored.

Growing Conditions

Pears need a deep, rich, fairly well drained soil. They prefer a pH between 6.0 and 6.5. Though they will tolerate a heavy soil, they can't withstand constantly poor



drainage.

For best results, plant in a slightly elevated site where late Spring frosts are less likely to be a problem.

Like all fruit trees, pears need full sun. These aren't quite as hardy as apples, usually to about -20°F. Depending on the variety, chill requirements range from 300 to 1000 hours. Pear trees tolerate black walnut trees.

Planting Pear Trees

The spacing depends upon the trees' ultimate size. For standard trees, allow 25 to 30 feet between plants. Semi-standards only need about 15 feet. Dwarfs can be planted even closer – 10 feet apart.

For European pears, those on regular pear rootstock should be planted with the bud or graft union *below* the soil surface.

Fire blight is an issue for susceptible root stocks. For that reason, resistant ones, such as Old Home, are often used.



RECIPES

Ann Harman

When Autumn comes the recipes for apples abound. But pears just seem to be ignored. That is a shame since the different varieties of pears are delicious both fresh and in a recipe. Out of season we can use canned pears in many recipes.

The pears you buy fresh were picked unripe because they ripen best after being picked. A slight softness at the stem means a ripe pear. Some pears, such as Bartlett, will indicate ripeness when the skin turns yellow. But some pears, such as Bosc, do not change their brown color.

Fresh pears go well with an assortment of cheeses. Serve as a dessert with coffee. Nutmeg is an excellent spice for pears, as is cinnamon.

Do you need a quick dessert? Try this recipe – all you need are four pears.

PEARS IN LIQUEUR

4 pears
1 cup chilled orange juice
1 tablespoon honey
2 tablespoons curaçao or kirsch

Pare the pears, quarter lengthwise, core and prick lightly. Combine the orange juice, honey and liqueur and cover the pears with the juice. Chill until ready to serve. Makes four servings.

Adapted from *Joy Of Cooking*
Irma Rombauer & Marion Becker

While we are on the subject of quick desserts, use your microwave for this one. When using pears for poaching or baking, don't let them become too ripe or they will get mushy.

Use them when still a bit firm.

HONEY LIME PEARS

1/2 cup honey
1/4 cup water
1/4 cup lime juice
1/2 teaspoon grated lime peel
2 cored, halved, pared, firm ripe pears

To Microwave: Combine honey, water and lime juice in two-quart microwave-safe dish. Microwave on HIGH (100%) 2-1/2 to three minutes or until mixture boils. Stir in lime peel. Add pear halves to syrup. Cover with vented plastic wrap and microwave on HIGH for seven to 10 minutes or until pears are tender. Serve warm or cold with poaching liquid. Makes four servings.

Sweetened With Honey
The Natural Way
National Honey Board

Caring For Pear Trees

Once they're trained, pear trees require less pruning than apple trees. Generally, after the third year pruning is limited mostly to diseased, damaged, or crossing branches. Branches that are shading other growth should also be removed. In some cases, pruning is done to limit the size of the tree.

Avoid heavy applications of fertilizer. Use a balanced formula, such as 10-10-10, at the rate of one pound per tree the first year. Increase this to two pounds the following year. Then, if the branches put on more than two or three inches of new growth per year, switch to a formula that contains no nitrogen.

During the growing season, the trees require about an inch of water every week to 10 days. Watering is especially critical for young trees. Drip or trickle irrigation is less likely to promote fungal attacks.

If the trees set an unusually heavy crop of fruits, thinning may be needed.

Insects And Diseases Of Pears

Fire blight, which is particularly prevalent on European pears, outweighs other concerns. However, this can be managed by selecting varieties that are either resistant or tolerant of the disease. Among these are Kieffer, Magness, Moonglow, and Seckel.

Trees that are fertilized heavily will experience more fire blight. For that reason, low nitrogen formulas are recommended. Prune any affected branches as soon as the disease strikes. Cut back six inches into healthy wood. To control outbreaks, spray affected trees with streptomycin when they're blooming.

Generally, pear trees are affected by the same insects and diseases as most other fruit trees. Fungi are more likely to occur in areas with high humidity. The leaves suffer from leaf spot and other fungi. Sooty mold



and sooty blotch affect the leaves and twigs. The fruits can develop fruit spot, fruit rots, and fly speck. Scab leaves blotches on the blossoms, foliage, fruits, and stems.

Concerning insects, the ones that are most likely to present problems are codling moth, curculio, scale, and plant bugs. Aphids, leaf hoppers, and other sucking insects can also damage the leaves.

Pear decline is a serious disease that is spread by insects. This weakens the tree over a period of years, eventually leading to death. It is most prevalent in the West.

A number of these insects and diseases can be minimized by cultural controls. Remove and destroy all affected plant tissue. Clean up all the fallen fruits, foliage, and other plant debris from around the trees at the end of the season.

Pollination And Bee Plant Status

Generally, cross pollination with another variety is needed for the best yields. Even when a variety is known to be self-fruitful, pollination will result in larger fruits. Garden catalogs will list appropriate pollenizers for each variety.

Flowering before apples, pear blossoms open about the same time as tart cherries. The blooms are perfect, containing both male and female structures. They appear on wood that is two years of age or older.

Pear flowers yield both nectar and pollen, which is good for building up colonies during early spring. Generally, the trees don't produce as much nectar as apple trees.

Recommended Varieties

Concerning specific varieties, I highly recommend the following, which are disease resistant.

Atlantic Queen European pear

This heirloom variety is resistant to fire blight. Very >

In case you missed the season on fresh pears you can use canned ones. This is a recipe for chicken that is truly elegant and a bit different.

GINGERED CHICKEN, PEAR AND WALNUTS

- 3 tablespoons margarine or a mixture of butter and cooking oil
- 4 chicken breast halves
- 1/4 teaspoon salt
- 1 16-ounce can pear halves
- 3/4 cup ginger ale
- 1/4 cup honey
- 3 tablespoons soy sauce
- 2 teaspoons cornstarch
- 1/4 cup water
- 1/4 teaspoon powdered ginger
- 1/4 cup walnuts, chopped

Melt margarine or butter and oil in frypan over medium heat. Brown

chicken breasts on both sides. Sprinkle with salt. Drain pears, retain juice. Add water to the juice to make 3/4 cup. Then, mix juice, ginger ale, honey and soy sauce. Pour over chicken. Cover and cook over medium heat, turning occasionally for 25 minutes or until done. Remove chicken from frypan and place in single layer in baking dish. Cut pear halves into wedges and place around chicken. Mix cornstarch, water and ginger and stir into drippings in frypan. Cook on medium heat until thickened. Pour over chicken and pears. Sprinkle walnuts on top. Bake uncovered at 350°F until pears are heated, about 10 minutes. Serves four.



Blueberries can be found the year around, either fresh or frozen. They combine very well with pears and make a delicious pie.

BLUEBERRY-PEAR PIE

- 3 cups sliced peeled pears (3 to 4 medium pears)
- 2/3 cup sugar or honey
- 3 tablespoons flour
- 1 teaspoon cinnamon
- 1/2 teaspoon ground nutmeg
- 3 cups blueberries
- 1 teaspoon lemon juice
- 1 tablespoon butter, chilled, cup up dough for one (9-inch) double-crust pie

Combine pears, sugar or honey, flour, cinnamon and nutmeg in large bowl. Gently stir in blueberries and lemon juice. Line pie pan with dough. Add filling. Dot top with butter. Top with second piece of dough.

Honey Recipes

NC State Beekeepers Association

large, the fruits weigh over a pound. Melting in your mouth, they're very aromatic. These ripen in September. The tree gives a very good yield, and tolerates adverse growing conditions.

Baldwin's Pride European pear

Introduced several years ago by USDA, this resists fire blight. The fruits have a sweet, rich flavor and delightful aroma. The overall color of the skin is gold or yellow with some russeting.

Honey Sweet European pear

A relatively new variety, this is resistant to leaf spot and fire blight. The sweet, richly flavored fruits are firm. Comparable to Seckels, they're golden russet. These ripen late in the year.

Tsu Li Asian pear

With some resistance to fire blight, this is recommended for areas with a long growing season. This only needs around 300 hours of Winter chill.

Harvesting

Pear trees begin bearing when they're three years old. They reach their full potential within a decade or so.

The harvest time depends on several factors, includ-

ing the weather, the region, and the type being grown. Allow Asian pears to fully ripen on the tree.

On the other hand, the European pears are picked before they ripen. When they're ready, the skin changes color and the stems should easily separate from the tree when the fruit is lifted from the spur. At this point, the flesh begins to soften and the seeds turn dark brown.

Early maturing European pears will ripen within a week of harvest, while later varieties will take several weeks. Generally, most are ready from August through October. However, some varieties start ripening in July on the West coast.

Some varieties, such as Kieffer, can be stored for several months at a temperature of 30 to 31°F.

The average yield for European pear trees is between 50 and 100 pounds. For the Asian, this is somewhat lower - 40 to 60 pounds.

Culinary Uses Of Pears

The majority of pears are eaten fresh. However, they are also made into juice, wine, cider, jelly, and preserves. These fruits are used fresh in salads and served with cheese. They can be spiced, pickled, dried, frozen, or canned. They're added to compote and poached for dessert. Pears can also be used for pies, other baked goods, and desserts. **BC**

Crimp edges; cut slits in top. Bake at 350°F for 60 to 65 minutes or until crust is golden brown and juices are bubbly.

Cooking Pleasures

Pears combine so well with fruit juices. Here is another simple recipe that uses orange and lemon juices to enhance the pears.

PERTH HONEYED PEARS

6 pears
1/4 cup honey
1 cup orange juice
1/4 cup lemon juice
3/4 cup water
1 stick cinnamon (2 inches long)
2 whole cloves

Peel pears and leave stalk attached. Place them in a saucepan. In another saucepan combine the honey, orange juice, lemon juice, water and spices and bring to the boil. Pour over pears. Put lid on and simmer pears gently until cooked. Baste pears from time to time with the syrup. Allow pears to cool in the syrup. Serve with whipped cream. Serves six.

The Australian Honey Recipe Book

Although this recipe takes a bit of time to make, the pears and the almond crunch can be made ahead

of time. The crispy topping contrasts with the tender fruit.

ROASTED PEARS WITH ALMOND CRUNCH

For almond crunch:

1 large egg white
3 tablespoons sugar
1/8 teaspoon salt
3/4 cup sliced almonds (preferably with skin; 2-3/4 oz)

Put oven rack in middle position. Line a baking sheet with parchment. Whisk together egg white, sugar and salt until sugar is completely dissolved. Then add almonds, stirring until coated. Spread mixture in a very thin layer on baking sheet, spreading almonds away from center. Bake at 350°F until deep golden, 15 to 25 minutes. Cool on baking sheet on a rack, then break into pieces. This can be made four days ahead and kept in an airtight container at room temperature.

For pears:

3 firm Bosc pears (1-1.2 lbs total)
2 tablespoons unsalted butter, softened
1/4 cup plus 1 tablespoon sugar
3 tablespoons Amaretto or other almond-flavored liqueur
1/2 cup water

Halve pears lengthwise and core. Spread one tablespoon butter on bottom of 8-inch square glass baking dish and sprinkle with 1/4 cup sugar. Arrange pears, cut sides up, on sugar, then dot pears with remaining tablespoon butter. Sprinkle remaining tablespoon sugar over pears, then drizzle with one tablespoon Amaretto. Roast pears, uncovered, at 425°F, until barely tender, about 25 minutes (sugar will harden on bottom). Add water, a pinch of salt, and remaining two tablespoons Amaretto to baking dish and stir around pears until sugar is dissolved, then baste pears with pan juices. Roast pears, basting twice, until tender, about 15 minutes more. Serve warm or at room temperature, drizzled with pan juices and topped with almond crunch. Pears, without almond crunch, can be roasted one day ahead and cooled completely, then chilled, covered. Reheat in 350°F oven, basting once with juices, for 10 minutes.

Gourmet

Now is a good time to check your farmers' markets for an assortment of pears. Although the early pears may be gone, quite a number of nice pears are available into the Winter months. **BC**



? DO YOU KNOW ?

Honey Bee Potpourri

Clarence Collison

Mississippi State University

Within the last few months beekeepers have learned that there are two relatively new microorganisms associated with honey bees looming on the horizon that may negatively impact the North American beekeeping industry. First we learned about a second nosema disease (*Nosema ceranae*) isolated from European honey bees and now a new virus (Israeli acute paralysis virus) that has

been associated with bees suffering from colony collapse disorder (CCD). As researchers study these organisms, in time we will learn how serious a problem they may be and if they are directly involved in CCD.

Please take a few minutes and answer the following questions to determine how familiar you are with basic beekeeping knowledge.

Level 1 Beekeeping

1. ___ African honey bee drones produce more sperm than European drones. (True or False)
2. ___ Honey bees infected with the protozoan *Nosema apis*, begin foraging at a younger age than uninfected bees. (True or False)
3. ___ Pollen stored in the comb has a small cover of honey deposited on its surface to prevent spoilage. (True or False)
4. ___ Stored pollen in the comb undergoes chemical changes. (True or False)
5. The original host of Kashmir bee virus was _____.
A. *Apis dorsata*
B. *Apis mellifera*
C. *Apis florea*
D. *Apis cerana*
E. *Apis andreniformis*
6. ___ European honey bee larvae are more attractive to female *Varroa* mites than Africanized honey bee larvae. (True or False)
7. ___ European/African hybrid workers and queens have higher metabolic rates than pure African or European bees. (True or False)
8. ___ In order to determine the amount of honey stores for Winter in a colony, a beekeeper would use the following estimates; a full depth comb holds approximately six pounds of honey, a medium depth comb four pounds and a shallow comb three pounds. (True or False)
9. ___ The size of the queen's court (retinue) is greater during the Winter than in the Summer. (True or False)
10. ___ Clustered bees prefer dark-colored combs of honey over new white combs for wintering. (True or False)
11. ___ Honey processed with the use of extractors and honey pumps granulates faster than comb honey of the same origin. (True or False)
12. ___ When a queen has been caged and held in a queen bank for some time, the eggs are reabsorbed and the ovaries shrink. (True or False)
13. Humidity in the hive and in a cluster of bees under normal conditions is maintained at ___ per cent.
A. 80-90 B. 50-60 C. 20-30
D. 40-50 E. 60-70

Advanced Beekeeping

14. ___ Pollen and bee bread differ biochemically. (True or False)
 15. ___ Yeasts, molds and bacteria of the genus *Bacillus* are commonly found associated with pollen removed from the flower, from pellets removed from pollen traps and pollen stored in the comb. (True or False)
- A.** Bee Virus X **B.** Sacbrood Virus **C.** Cloudy Wing Virus
D. Bee Virus Y **E.** Black Queen Cell Virus
F. Acute Bee Paralysis Virus **G.** Kashmir Bee Virus
H. Chronic Bee Paralysis Virus **I.** Deformed Wing Virus
J. S-Shaped Virus **K.** Filamentous Virus
L. Kakugo Virus **M.** Slow Paralysis Virus **N.** Arkansas Bee Virus **O.** Iridescent Virus
16. ___ Known as the aggression virus and is found in the honey bee brain.
 17. ___ Three viruses known to be associated with nosema disease ____
 18. ___ The symptoms associated with the virus are very similar to rickettsial disease and include milky white hemolymph.
 19. ___ Diseased larvae are pale yellow and have a tough sac-like skin similar to that seen in sacbrood-infected larvae.
 20. ___ Infected bees typically suffer from paralysis of the forelegs and midlegs in the final few days prior to death.
 21. ___ Israel acute paralysis virus has been isolated from bees that were imported from _____.
A. Canada
B. Russia
C. Hawaii
D. United Kingdom
E. Australia
 22. Please give three reasons why African drones have a mating advantage over European drones when Africanized bees colonize areas with resident European populations. (3 points)

Answers On Next Page

?Do You Know? Answers

- 1. False** African drones produce fewer sperm than European drones.
 - 2. True** Honey bees infested with the protozoan *Nosema apis*, begin foraging at a younger age than uninfected bees.
 - 3. True** Forager worker bees collect pollen that is then packed into cells of the brood comb by other, generally younger bees and a small cover of honey is deposited on the pollen to prevent spoilage.
 - 4. True** Studies have shown that pollen stored in the comb undergoes chemical changes resulting from microbial action, principally a lactic acid fermentation caused by bacteria and yeasts.
 - 5. D) *Apis cerana***
 - 6. False** The larvae of the African honey bee and European honey bee were found to be equally attractive to female *Varroa* mites and *Varroa* mites reproduced equally well on worker brood of both bee types.
 - 7. False** European/African hybrid honey bees have lower metabolic rates than pure African or European bees. The lower metabolic rates could reduce flying ability, which in turn could negatively affect foraging, swarming and mating. As a result, hybrid colonies may not survive well in the wild, which would contribute to the loss of European traits.
 - 8. False** In estimating the amount of winter stores, the beekeeper should use the following values for estimating the amount of honey contained in the following size combs. A full depth comb will hold approximately six pounds of honey, a medium depth comb three pounds and a shallow depth 2.5 pounds.
 - 9. False** Many factors affect the size of the queen's court in relation to her activities, age and physiological condition. Usually eight or more worker attendants are present when a queen is stationary, but they tend to lose contact as she walks rapidly over the comb. An average of 6.2 attendants has been recorded when the queen is moving, increasing to 8.7 when she is laying an egg and 10.8 when she is stationary. The size of the court diminishes in the Fall with the decrease in egg laying and remains low throughout the Winter.
 - 10. True** The Winter cluster invariably moves up among the dark brood combs and tends to avoid new white combs of honey as it slowly eats its way upward in the hive during the Winter.
 - 11. True** In order for honey to crystallize, there must be some form of particulate matter present on which the crystal can grow (honey crystallization nuclei). Dust, pollen, wax particles, small pieces of propolis and even air bubbles all can serve as honey crystallization nuclei. Since these materials are added during the extraction process and air is added with a honey pump, the granulation process is sped up.
 - 12. True** When a queen is prevented from continuing to lay eggs i.e. removed from a mating nuc and confined in a queen bank, in time her ovaries will shrink and developing eggs will be reabsorbed.
 - 13. D) 40-50 per cent**
 - 14. True** Pollen and bee bread differ biochemically. The conversion of pollen to bee bread and the accompanying biochemical changes have been postulated to be the result of microbial action, principally a lactic acid fermentation caused by bacteria and yeasts. Bee bread contains more reducing sugars than pollen from the same plant species. Also, bee bread contains vitamin K and a milk-digesting enzyme which is not found in pollen pellets removed from the bee's pollen basket.
 - 15. True** Examination of pollen collected from the flower, from pollen pellets removed by a pollen trap placed on the hive and from pollen stored in the comb, revealed an extensive microflora associated with pollen. In a series of studies, 41 species of bacteria belonging to the genus *Bacillus*, 148 species of molds and 113 species of yeasts were isolated from pollen.
 - 16. L) Kakugo Virus**
 - 17. E) Black Queen Cell Virus, K) Filamentous Virus and D) Bee Virus Y**
 - 18. K) Filamentous Virus**
 - 19. E) Black Queen Cell Virus**
 - 20. M) Slow Paralysis Virus**
 - 21. E) Australia**
 - 22. Africanized honey bee colonies produce more drones than European honey bee colonies of the same size.**
- The more numerous African honey bee drones will drift into European colonies which suppresses the production of European drones.
- African honey bee colonies experience high rates of queen loss and the resulting queenless colonies rear large numbers of worker-produced drones.
- There may be differences in mating-flight times that increase the chances of European queens mating with African drones, but decreases the chances of African queens mating with European drones.
- Sperm from African drones may have an advantage over sperm from European drones, even if queens mate with the same number of drones of both types.
- There were a possible 13 points in each test level this month. Check the table below to determine how well you did. If you scored less than six points, do not be discouraged. Keep reading and studying - you will do better in the future.

**For Your Queen
Needs Call
Queen Cells Available -
Shipped By UPS
MIKSA HONEY FARMS**

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

Number Of Points Correct
13-11 Excellent
10-8 Good
7-6 Fair

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

GLEANNINGS

NOVEMBER, 2007 • ALL THE NEWS THAT FITS

OBITUARY - George Imirie

George Wady Imirie, Jr. age 84 of Rockville, MD, who tirelessly promoted beekeeping and public education about bees, passed away on September 6, of congestive heart failure. Mr. Imirie founded the Montgomery County Beekeepers Association (MCBA) in the 1980s and led it until his retirement in 2004. For many years, he and his sons thrilled adults and children alike at the Montgomery County Fair by giving demonstrations with a live hive of honey bees inside a screened tent. George wore only shorts and a t-shirt. The MD State Beekeepers Association, which he had served as president, named the yearly award for distinguished educational activities in MD "The George Imirie Award."

George was an Eastern Apiculture Society (EAS) certified Master Beekeeper and was a stalwart promoter of that certification program. He advocated an involved, scientific approach to hive management and was well known for urging people to be "beekeepers not bee-havers." His opinionated and blunt "Pink Pages," a monthly publication, was read by beekeepers all over the world.

A Bethesda native born to a family that has been in the area for 298 years, Mr. Imirie started tending hives at age nine, following in the footsteps of his father and grandfather. He dropped the hobby when he went to the Univ.

of MI for his undergraduate degree.

He was studying for a graduate degree in atomic engineering when World War II broke out. He was briefly in the Army, then joined the Manhattan Project in Oak Ridge, TN, and Los Alamos, NM, working on the atomic bombs that were dropped on Hiroshima and Nagasaki.

After the war, he studied engineering at WA Univ. in St. Louis and American Univ., one of his sons said. Mr. Imirie returned to Bethesda and helped run the family auto parts business until it was sold 18 years ago.

He resumed beekeeping on his six-acre property in Rockville. He set up the hives in a square around a gnarly old apple tree. A hedge trimmed to a height just taller than him surrounded the yard so when bees emerged from the hives in search of nectar they would fly high enough to clear the bushes and avoid bystanders.

In recent years, despite having several strokes, Mr. Imirie continued beekeeping using an electric scooter to get around. When the beekeeping community arranged with the state of MD to produce automobile license plates with a beekeeping logo, he was given the prototype, which he proudly affixed to his scooter: Bee 001. In 1998 EAS awarded George its prestigious Divelbiss Education Award for his work with the non-beekeeping public.



GOLDEN HERITAGE FOODS ANNOUNCES LICENSE AGREEMENT

Golden Heritage Foods LLC, one of the nation's largest honey packers, announced in September that it has developed a license agreement with Dream Works Animation related to the upcoming *Bee Movie*. Releasing November 2, *Bee Movie* is a comedy from creator Jerry Seinfeld that will change everything you thought you knew about bees.

"This project provides us with an outstanding opportunity to elevate consumer awareness and education about the health benefits of honey and the huge role bees play in agricultural production," said Brent Barkman, Executive Chairman of the Board, Golden Heritage Foods.

"We are excited about our company's involvement in this venture and the level of support that will be provided by the National Honey Board for in-store merchandising and promotion," said Dwight Stoller, Chief Executive officer of Golden Heritage Foods.

Golden Heritage Foods, LLC packages millions of pounds of honey at its plants in Kansas and Ohio, and distributes it nationwide under various brand names.

In related news the Toledo-Lucas County Port Authority will become owner of a Van Wert, OH, honey factory as part of a state-sponsored financing package that enables the plant owner to expand operations.

Under arrangements the port

authority's board of directors approved Golden Heritage Foods LLC will expand the 100,000-square-foot plant by 32 percent, add 20 full-time positions to its 41-member work force, and add equipment expected to cost \$2,105,000.

The board approved the deal, for which the port authority will receive a \$20,000 fee at closing, by an 11-0 vote after port staff assured directors none of the agency's own funds would be vulnerable should the honey maker run into problems.

The Ohio Department of Development will fund the Golden Heritage project with \$5.53 million in taxable and tax-exempt bonds from the Ohio Enterprise Bond Fund.

For the project to be eligible for funding, facility and equipment must be owned by the port authority.

The port authority's only obligation to repay the Ohio Enterprise Bond Fund will be from the proceeds of lease payments or the facility's eventual sale.

Golden Heritage, one of the four largest U.S. honey makers, will lease the buildings and equipment for an estimated 12 years.

The Bridgewater bond issue will be backed by a bank letter of credit.

The port authority will have no financial liability and receive an annual fee equal to 0.125 percent (1/8 of 1 percent) of the outstanding principal, starting at \$4,500.

In 1999 he contracted throat cancer, which caused his previously booming voice to become a raspy whisper. However, that didn't stop him from running the monthly bee meetings, where he would quiz both neophyte and experienced beekeepers on their scientific knowledge, correcting them if they were not completely accurate. "You had to know your material if you were going to give a presentation and he was in the room. His high standards made us all better beekeepers, and we will miss his guidance," said David Bernard,

President of the MCBA.

Mr. Imirie was a member of Bethesda Presbyterian Church and enjoyed boating on the Chesapeake Bay. He was also an enthusiastic fox hunter and was a master of the hunt for the Potomac Hunt several decades ago, said one of his sons, Alexander Imirie of Gaithersburg.

George's death comes soon after the sudden death of his son, Arthur, of a heart attack on July 20. He is survived by his sons Allan, Aaron, and Alexander, three grandchildren, and five great grandchildren.

Eva Crane - 1912 - 2007

Dr Eva Crane passed away peacefully on the afternoon of Thursday September 6, 2007, aged 95 years. Founder, and for 35 years Director, of the International Bee Research Association she was, for half a century, a towering figure in the world of apiculture and the legacy of her written work has been, and will continue to be, a beacon to guide and inspire for many years to come.

Eva Widdowson was born on 12 June 1912 the younger daughter of Thomas Henry and Rose. She had an older sister Elsie May, who went on as Dr Widdowson to become world famous for her work on nutrition and diet.

Eva grew up in Dulwich, South London and was educated at Sydenham School in Kent. She won a scholarship to read mathematics at King's College, London. A brilliant student, one of only two women then reading mathematics at the university, she completed her degree in two years. An MSc in quantum mechanics soon followed, and she received her PhD in Nuclear Physics in 1938.

In 1941 she was appointed to a Lectureship in Physics at Sheffield University. To this post she brought her proven intellect, acute powers of observation, a wide ranging curiosity and an incisive and penetrating line in questioning, therefore, a burgeoning career in the rapidly developing world of nuclear physics seemed assured. However, in July 1942 she married James Alfred Crane, RNVR. One of the wedding presents was a hive of bees the purpose of which was to provide honey and so give sweetness at a time of sugar shortage.

She took out a subscription to *Bee World* and became an active member of the local beekeepers' association. Later she became secretary of the research committee of the British Beekeepers' Association (BBKA). However, convinced of the vast potential of beekeeping in the tropics, her outlook

was international. In 1949 she founded the Bee Research Association, dedicated to "working to increase awareness of the vital role of bees in the environment." The organization was "international" in outlook and membership from the very beginning but did not add the word to its title until it was proposed at a meeting in France in 1976. From then on it became IBRA.

Also in 1949 she took over the editorship of *Bee World*, a journal that she saw as the "international link between beekeeping science and practice." She expanded its pages to include abstracts of all that was published worldwide on bees and bee science providing it was "accurate and worthy of inclusion" - her standards were very high. Soon the large number of abstracts needed its own publication. *Apicultural Abstracts* was founded

and continued until 2005 and still forms the basis of one of the most comprehensive databases of bee related information in the world with over 60,000 entries.

By 1960 IBRA had a worldwide network of contacts and Eva felt that there was a wealth of new bee research that needed to be disseminated and published. In 1962 she founded *The Journal of Apicultural Research* that soon became, and remains to this day, the premier English language vehicle for the publication of cutting edge apicultural research. In this age of instant electronic access it is perhaps hard to imagine the importance of these publications in the mid decades of the 20th century. The information they provided undoubtedly made possible the careers of many bee scientists working in countries which were, at that time, cut off from access to mainstream publications.

Between 1950 and 1990 Eva's pursuit of all things bee related took her to over 60 countries and her travels resulted in a number of beekeeping discoveries. These

and her ability to put together clues and then lucidly report her findings have made her work, over 180 publications in all, inspirational to many. *A Book of Honey* (Heinemann, 1980) and *The Archaeology of Beekeeping* (Duckworth, 1983) reflected her strong interests in nutrition and the ancient past of beekeeping. She took late retirement from IBRA in 1984 to concentrate on the two seminal tomes that will forever be keystones in the study of beekeeping and the pursuit of bee science.

They are:

Bees and Beekeeping - science, practice and world resources (Heinemann 1991)

The world history of beekeeping and honey hunting (Duckworth 1999)

Everywhere she went she sampled the life of the local people, sometimes in the remotest rural areas of the world. She went ostensibly to share her beekeeping knowledge and to teach governments, NGOs and farmers. She recorded these travels in her book, *Making a Beeline* (IBRA 2003). Typically, she always claimed to have learnt much more than she taught. From her travels she acquired a huge eclectic collection of beekeeping artifacts that, combined with other materials, constitute the IBRA Historical Collection containing some 2000 items which have now been digitally photographed and recorded while the actual items await being placed on show in an international Museum being established in Belgium.

The meticulousness of Dr. Crane's research showed in her examination of ancient rock images involving bees and honey. She studied 152 sites in 17 countries from a register of rock art she established herself for her book *The Rock Art of Honey Hunters* (2001).

Eva Crane received many honours for her work. In 1985 she was awarded an Honorary Doctorate from Ohio State University in recognition of her contribution to the science of beekeeping; it was an honour of which she was particularly proud. She was made an officer of the Order of the British Empire in 1986; an award that many felt under-rated her achievement. Her life was devoted to building the IBRA into a world centre of expertise on beekeeping. Based in her private front room until 1966, the Association eventually found offices in Chalfont St Peters, Bucks, and since 1985 has been based in Cardiff. In support of the IBRA and its work she established the Eva Crane Trust that aims to advance the science of apiculture - in particular the publication of books on the subject, and to promote apicultural libraries and museums of historical beekeeping artefacts.

Richard Jones, Director
IBRA



In the early days Eva worked in the front room of her home, publishing journals and books, evaluating research and organizing conferences, meetings and travels abroad



NEW ZEALAND THROWS IN THE TOWEL

New Zealand's *Varroa* Agency is to shut down shop.

The decision follows the discovery of *Varroa* mite in the South Island last year and the subsequent government decision not to attempt its eradication as well as a decision by beekeepers not to pay a further levy for future surveillance.

The agency, funded by South Island regional and unitary councils and the bee industry, was formed in 2005 to implement a strategy to prevent the spread of *Varroa* from the North Island.

Its responsibilities included education, managing a *Varroa* monitoring program on South Island beehives and a permit system for *Varroa* border control from the North Island to the South Island.

Agency board chairman Duncan Butcher doesn't see the arrival of *Varroa* on the South island as an agency failure.

"I believe that what was achieved sets a good model for the control and handling of any further biosecurity incursions into New Zealand," he says in a statement.

The agency says the disestablishment process began in October and started the process of winding-up its financial operation.

Some of the area's older beekeepers have also left the industry and the number of hobbyists has dropped dramatically.

Its predicted hive numbers in the Nelson area will fall by 33% in the next five years as *Varroa* becomes established.

WHERE DID THAT BEEYARD GO?

Between July 2005 and July 2006, the population of nonmetro America grew by 318,000 people. This 0.6 percent increase is below the metro growth rate for the same period (one percent) but is well above the nonmetro annual growth rate of 0.2 percent at the beginning of the decade. The upturn is due entirely to an increase in net domestic migration – the number of people moving from metro counties to nonmetro destinations minus those moving in the opposite direction.

In 2001-02, 40,000 more people moved into nonmetro counties from metro locations than moved out. In that year, the gain from domestic migration was less than that from either international immigration or natural population increase (births – deaths). However, the annual net flow from metro areas grew to nearly 150,000 by 2005-06, thus contributing more to overall nonmetro population growth than immigration (62,000) or natural increase (107,000).

Nonmetro population gains from net domestic migration were highest in western locations that combine scenic attributes with tourism, recreation, second-home development, and retirement migration. Amenities combined with proximity to metro jobs fueled rapid growth in many parts of the nonmetro South, including the Texas Hill Country, southern Appalachia, the Florida coast, and northern Virginia.

The massive departure of resi-

dents from flood-ravaged New Orleans after September 2005 was followed by sharp rises in the population of several nonmetro counties in southern Louisiana and Mississippi, along with nearby metro areas, such as Baton Rouge.

Of the 2,070 U.S. nonmetro counties, the number losing population from net domestic migration declined from 1,157 in 2000-01 to 885 in 2005-06. Net migration loss continued in counties with very high poverty, such as in the Mississippi Delta and Rio Grande Valley, and in sparsely settled agricultural counties in the Nation's heartland. In addition to experiencing high outmigration among young adults an increasing number of Great Plains and Corn Belt counties are losing population through natural decrease – more deaths than births – which reflects an aging population.

Counties dependent on mining or manufacturing switched from net migration losses to net migration gains during the past five years. Farming-dependent counties continued to show an overall net migration loss in 2005-06, although not as severe as in 2001-02. Nonmetro counties with more diverse, service-based economies are better able to retain current residents and attract newcomers. Counties which predominantly rely on recreation and tourism experienced four times the rate of domestic migration in 2005-06 as did nonmetro counties as a whole.

MAXANT HAS A NEW OWNER

As of August 31, 2007 Maxant Industries Honey processing Equipment has a new owner. The new owner is Maxant Iron & Steel Corporation.

Christa Louis Maxant-Heinenman will be serving as President, Jake Heinenman, Vice President, Theodor

W. Maxant, Secretary/Treasurer and Chief Engineer, George Matthews, Office Manager and Williams Patterson, Technical Advisor.

New production machinery and capitol is pouring into this facility to accomplish the goals of the new company.

MANUKA HONEY IN ASIA

Honey health science company Manuka Health New Zealand Ltd. announces a distribution agreement with Southeast Asian health products retailer Vistern Health, a subsidiary of Eu Yan Sang Int. Ltd.

The agreement provides for distribution of Manuka Health branded products initially in Malaysia followed by expansion into other countries.

Eu Yan Sang is a household name in traditional Chinese medicine with 122 retail outlets in Hong Kong,

Macau, Malaysia and Singapore. It markets more than 280 products under its brand and more than 1,000 Chinese herbs and other medicinal products. It also operates a chain of 23 Traditional Chinese Medicine clinics in Singapore, Malaysia and Australia.

Manuka Health chief executive Kerry Paul says the deal adds to Manuka Health's global distribution network. The company's factory already exports more than 60 products to markets in 25 countries.

GRANTS FOR AGRICULTURAL SUSTAINABILITY

The Northeast Sustainable Agriculture Research and Education (SARE) program offers three different competitive grant programs, all with application deadlines in the late fall and early winter. These grants are capped at \$10,000 and should offer innovative approaches to sustainable agriculture.

Farmer grants are for commercial farmers who would like to explore a new practice or idea, often by conducting an experiment, trial, or on-farm demonstration. Projects can explore a wide range of topics such as pest management, soil health, adding value, marketing, or new production techniques, and funds can be used to pay for the farmer's time and for materials specific to the project. The application deadline is December 18.

Partnership grants are for Cooperative Extension, NRCS, and other agricultural professionals who work directly with farmers. Partnership Grants support on-farm research and demonstration projects in sustainable agriculture, and funds can be used to pay for personnel, materials, sampling, supplies, testing, and to compensate cooperating farmers for

their time. The application deadline is December 4.

Sustainable Community grants are for projects that connect farming and rural economic development. Projects can address issues like finance, marketing, land and water use, enterprise development, adding value to farm products, or farm labor. Applicants must be affiliated with an organization such as a community nonprofit, Cooperative Extension, local government, an educational institution, a planning board, a farming cooperative, or an incorporated citizens' group. This grant is offered in partnership with the Northeast Center for Rural Development, and the application deadline is November 27.

Applications are posted on the Northeast SARE web site at www.uvm.edu/~nesare, or call 802/656-0471 to request a printed copy. The Northeast SARE region is made up of Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia, and Washington, D.C.

BEGINNING BEEKEEPING VIDEO 2 hrs! All survival essentials: building hive; installing, feeding, medicating, inspecting, managing bees; harvesting, diseases & parasites; behavior. \$35. Dr. Iacobucci, 172-BC Washington, Pembroke, MA 02359 www.roctronics.com/bee.htm. (TF)

RURAL HERITAGE - bi-monthly magazine in support of farming and logging with horses, mules, and oxen. Subscription includes THE EVENER Workhorse, Mule & Oxen Directory; \$29 for 6 issues; sample \$8.00. Rural Heritage, 281-B Dean Ridge Lane, Gainesboro, TN 38562. 931.268.0655, www.ruralheritage.com

THE SCOTTISH BEEKEEPER. Magazine of The Scottish Beekeepers' Assoc. Rates from Enid Brown, Milton House, Main Street, Scotlandwell, Kinross-Shire KY13 9JA, Scotland, U.K. Sample \$1.

IBRA: INFORMATION AT YOUR FINGERTIPS. IBRA is the information service for beekeepers, extension workers and scientists. Our members support this service and enjoy the benefits of belonging to IBRA, which includes *The Journal of Apicultural Research incorporating Bee World*. We need your involvement - join IBRA - support this important information network and extend your beekeeping horizons. For more information contact: IBRA, 18 North Road, Cardiff CF10 3DT, UK. Telephone (+44) 29 2037 2409. Fax (+44) 29 2066 5522; mail@ibra.org.uk.

THE AMERICAN BEEKEEPING FEDERATION has many benefits to offer its members. Send for a membership packet of information today! Contact the American Beekeeping Federation, P.O. Box 1038, Jesup, GA 31598, 912.427.4233, fax 912.427.8447 or email info@abfnet.org.

IRISH BEEKEEPING. Read An Beachaire (The Irish Beekeeper) Published monthly. Subscription \$22.00/year, post free. Mr. Graham Hall, "Weston", 38 Elton Pk., Sandycove, Co. Dublin, Eire, email: Graham Hall@dtti.team400.ie.

THE AUSTRALASIAN BEEKEEPER. Published monthly by Pender Beegoods Pty. Ltd. Send request to: The Australasian Beekeeper, 34 Racecourse Road, Ruthersford NSW 2320, Australia. Sub. \$US 38 per annum, Surface Mail (in advance). Payment by Bank Draft. Sample free.

Bee interested. For beekeeping information read the AMER. BEE JOUR. New editorial emphasis on practical down-to-earth material, including question & answer section. For free copy, write to: ABJ, Hamilton, IL 62341.

THE AUSTRALIAN BEE JOUR. Monthly, Annual subscription outside Australia, sent by airmail, \$100 Australian. Write to: Victorian Apiarists' Association Inc., Annette Engstrom & Lauren Mitchell, 6 High St., Eaglehawk, Victoria 3556, Australia. Sample on request. Email: abjeditors@yahoo.com.

THE NEW ZEALAND BEEKEEPER. National Beekeeper's Association of NZ. Write for rates & indicate whether airmail or surface. NZ BEEKEEPER, P.O. Box 447, Hamilton, NZ.

BEEES FOR DEVELOPMENT. Information for beekeepers in remote areas. Sponsor a subscription. \$35, quarterly journal. Troy. Monmouth, NP254AB, UK. info@beesfordevelopment.org

HIVELIGHTS, published by The Canadian Honey Council. Write Suite 236, 239-5149 Country Hills Blvd. NW, Calgary, AB T3A 5K8

THE BEEKEEPERS QUARTERLY published by Northern Bee Books, Scout Bottom Farm, Mytholmroyd, Hebden Bridge, West Yorks HX7 5JS, or jeremy@recordermail.demon.co.uk for sample copy.

MANITOBA BEEKEEPER is published quarterly by the Manitobab Beekeepers' Association. Write for a sample copy to Lois Simpson, Lot 19, Kingsway Kort, RR #1, Brandon, MB R7A 5Y1.

HONEY BEE SCIENCE is a Japanese Science and Research Journal. For information contact Japan Publication Trading Co. Ltd., P.O. Box 5030, Tokyo Internationalk, Tokyo, Japan.

MELLIFERA is published twice a year by the Development Foundation of Turkey. An annual subscription is \$US 20. Write to TÜRKIYE KALKINMA VAKFI, Çetin Emeç Bulvan, 7. Cadde No: 39, Öveçler, 60460 Ankara, TURKEY.

BEEKEEPING published by Devon Beekeepers' Association. Memberships rates outside Europe are £21. Send to Brian Gant, Leat Orchard, Grange Rd., Buckfast, Devon TQ11 0EH.

ALBERTA BEE NEWS is published monthly by The Alberta Beekeepers Association, serving the interests of the beekeepers since 1933. A subscription is \$35/year. Sample free upon request. Send to The Alberta Beekeepers Association, 11434 - 168 Street, #102, Edmonton, Alberta, Canada T5M 3T9.

BEECRAFT: A full color monthly beekeeping magazine for beginners and experts alike covering all aspects of beekeeping in Great Britain and Ireland. FREE SAMPLE COPY on request. £40 for 12 issues including airmail postage. Credit cards accepted. Contact Bee Craft Ltd., 107 Church Street, Werrington, Peterborough, PE4 6QF. Email: secretary@bee-craft.com Web: www.bee-craft.com; Tel/Fax +44 1733 771221.

DAS BIENENMÜTTERCHEN - Contact IBSZ e.V. Geschäftsstell: Karl Henzler, Fatiostrasse 35, CH-4056 Basel.

LA SANTÉ DE L'ABEILLE - Fédération Nationale des Organisations Sanitaires Apicoles Départementales, 41, rue Pernety, 75014 PARIS.

BIRØKTERAN, Norges Birøkterlag, Bergerveien 15, N-1396 Billingstad, NORWAY.

TEKNIK ARICILIK - Türkiye Kalkınma Vakfı, Çetin Emeç Bulvarı 8. Cad. No: 14/11, Öveçler 06460 ANKARA.

VIDA APÍCOLA, Montague Editores, C/ Ausiás March, 25, 1°, 08010 Barcelona.

ULUDAG BEE JOURNAL - Uludag Beekeeping Association, published quarterly in Turkish (with English titles and summaries of all articles) and English in all aspects of beekeeping: news, practical beekeeping, research articles. A link between Turkish beekeeping and the world. Gazcular Cad. No. 9/2 16220 Bursa-TURKEY. Tel & Fax: +90 224 224 3964, http://www.uludagaricilik.org.

STATEMENT OF OWNERSHIP MANAGEMENT AND CIRCULATION (Act of August 12, 1970). Section 3685. Title 39, United States Code. 1. Title of publication: BEE CULTURE MAGAZINE. 2. Publication Number: 9243-80. 3. Date of Filing: October 1, 2007. 4. Frequency of Issue: Monthly. 5. Issues #12. 6. Price \$25. 7. and 8. Location of known office of publication, headquarters or general business offices of the publisher: PO Box 706, Medina, Ohio 44256-0706. 9. Names and addresses of publisher and editor are: Publisher, John Root, PO Box 706, Medina, Ohio 44258-0706 and Kim Flottum, Medina Ohio. 10. Owner: The A. I. Root, Co., Medina, Ohio; Stockholders: John Root, Medina, Ohio; Stuart Root, Wadsworth, Ohio; Elizabeth Judkins, Silver Bay, MN; Brad Root, Medina, Ohio; Robert Root, Medina, Ohio; 11. The known bondholders, mortgagees, and the security holders owing or holding one percent of more of total amounts of bonds, mortgages or other securities are: None. 12. For completion by non-profit organization authorized to mail at special rates (Sec. 132-122, Postal Manual); Not applicable. 13. Publication Title: BEE CULTURE MAGAZINE. 14. Issue date for circulation data below: October 1, 2006. 15. Extent & nature of circulation: Beekeeping Industry - worldwide. 15A. Total number of copies printed (net press run); Average number copies each issue during preceding 12 months, 13,057. Actual number of copies of single issue published nearest to filing date, 13,125. 15B. Paid/requested outside-county mail subscriptions stated on form 3541: 1. Average number copies each issue during preceding 12 months, 11,891. Actual number of copies of single issue published nearest to filing date, 11,925. 2. Paid in-county subscriptions stated on form 3541: Average number copies each issue during preceding 12 months, None. Actual number of copies of single issue published nearest to filing date, None. 3. Sales through dealers and carriers, street vendors, counter sales, and other non-USPS paid distribution: Average number of copies each issue during preceding 12 months, 216. Actual number of copies of single issue published nearest to filing date, 229. 4. Other classes mailed through the USPS: Average number of copies each issue during preceding 12 months, None. Actual number of copies of single issue published nearest to filing date, None. 15C. Total paid and/or requested distribution: Average number of copies of each issue during preceding 12 months, 12,107. Actual number of copies of single issue published nearest to filing date, 12,154. 15D. Free distribution by mail (samples, complimentary, and other free). 1. Outside-county as stated on form 3541: Average number of copies of each issue during preceding 12 months, None. Actual number of copies of single issue published nearest to filing date, None. 2. In-county as stated on form 3541: Average number of copies of each issue during preceding 12 months, None. Actual number of copies of single issue published nearest to filing date, None. 3. Other classes mailed through the USPS: Average number of copies of each issue during preceding 12 months, 85. Actual number of copies of single issue published nearest to filing date, 134. 4. Free distribution outside the mail: Average number of copies of each issue during preceding 12 months, 131. Actual number of copies of single issue published nearest to filing date, 95. 15E. Total free distribution: Average number of copies of each issue during preceding 12 months, 216. Actual number of copies of single issue published nearest to filing date, 229. 15F. Total distribution: Average number of copies of each issue during preceding 12 months, 12,323. Actual number of copies of single issue published nearest to filing date, 12,383. 15G. Copies not distributed: Average number of copies of each issue during preceding 12 months, 734. Actual number of copies of single issue published nearest to filing date, 742. 15H. Total (sum of 15f and g): Average number copies of each issue during preceding 12 months, 13,057. Actual number of copies of single issue published nearest to filing date, 13,125. 15I. Percent paid and/or requested circulation: Average number of copies of each issue during preceding 12 months, 98%. Actual number of copies of single issue published nearest to filing date, 98%. 16. Publication of statement of ownership will be printed in the November 2007 issue of this publication. 17. I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanction (including fines and imprisonment) and/or civil sanctions (including civil penalties). Signed Kim Flottum, Editor.

HOLIDAY GIFTS FOR EVERYONE ON YOUR LIST –

Beekeeping Principles



A Manual for Beginners
A Guide for Gardeners
By James E. Tew

Beekeeping Principles

A manual for the beginner and a guide for the gardener by Dr. James E. Tew. This book discusses all major aspects of hobby beekeeping – hive assembly, package installation, honey extraction, swarming. It has many photos, list of pollen sources and much more. Soft cover, 245 pages. **\$9.95 + \$3.00 shipping.**



Gift Certificates
Any Amount

Walter T. Kelley Co., Inc.

P.O. Box 240 • Clarkson, KY 42726-0240

270.242.2012 • 800.233.2899

FAX 270.242.4801 • www.kelleybees.com



Tools not included

Utility Tote

Heavy, durable nylon, 8½ x 8½ X 15 high. **\$35.00**



Jacket Protectors in 100% Cotton or 100% Nylon with removable hat/veil combination attached. Machine wash, cool water; line dry. **\$92.50, + shipping.**

Vented Cowhide and Pigskin Gloves available in small, medium, large, and x-large.



Display Advertisers

Bees & Queens

Bee Weaver Apiaries	36
Glenn Apiaries	35
Hardeman Apiaries	35
Harper's Honey Farm.....	44
Harrell & Sons	41
Hawaiian Queen	14
Koehnen, C.F. & Sons.....	35
Long Creek Apiaries.....	41
Miksa Honey Farm.....	56
Norton's Nut & Honey Farm.....	18
Olympic Wilderness	7
Pendell Apiaries	60
Rossman Apiaries	6
Shumans Apiaries	41
Strachan Apiaries	11
Taber's Queens	14
Waldo Apiaries.....	8
Weaver, R Apiaries.....	48
Wilbanks Apiaries	25

Associations/Education

American Beekeeping Federation	1
American Honey Producers	9
Beekeepers Quarterly.....	18
Hibernation Diet Book	35

Equipment

A&O Hummer Bee Forklift	16
Beeline Apiaries	48
Bee's Forever Plastics.....	9
CC Pollen.....	11
Cowen Mfg.....	22
Dakota Guinness.....	44
Humble Abodes	
Woodenware	18
Pierco Frames	14
Rauchboy Smoker.....	44
Small Cell 4.9	18
Swinger Forklift	2
Vented Beehive Cover	16

Related Items

Angel Bottles	29
BeeGeek Clothing	14
Beehive Botanicals.....	16
Branding Irons	14
D&L Transport.....	22
Experienced Manager	
Wanted	35
Feed Bee.....	14
Global Patties	29

Golden Heritage Foods.....	18
Langstroth Bumper Sticker.....	48
Lazy Bee Soaps & Balms.....	16
Medivet.....	4
Mite-Away II, Formic Acid	6
Mother Lode Products.....	11
Oxalic Acid	25
R. M. Farms.....	9
Sailor Plastics, Containers	21

Suppliers

B&B Honey Farm.....	22
BeezNeez Supplies	8
BetterBee.....	Inside Front
Better Way Equipment.....	60
Blossomland Bee Supply.....	8
Brushy Mountain	4
Burch Bottle & Packaging ... In Bk	
Dadant	17
GloryBee Beekeeping Sup	22
Honey Bee Container	9
Kelley, Walter	63
Lapp's Bee Supply	8
Mann Lake Supply.....	Bk Cover
Maxant Industries	41
Miller Bee Supply.....	60
Root Publishing	26
Ross Rounds	14
Rossman Apiaries	6
Ruhl Bee Supply	16
Sherriff, B.J.....	11
Simpson's Bee Supply.....	48

Robert Frost famously wrote “Good fences make good neighbors.” We all need good neighbors. I’ll do about anything to keep peace with a neighbor. You don’t ever want to feud with one. That road’s paved straight to Hell. I learned the hard way.

Here in Peach Valley, my good neighbor Elvis is the best of neighbors, in all ways but one.

We mostly talk across our common fence, Elvis and I. We talk apples and sweet cherries and grapes and varmints. There might be a bear on the ditch, or a mountain lion. Last Winter it was a bobcat. Elvis tempts me when he makes a rare political statement – one with which I seldom agree – but I never take the bait.

He stays on his side of the fence, I on mine. Good fences make good neighbors.

We share a small apple orchard. The property line runs right through it, and therein lies the rub. We both sell apples, but Elvis is the serious grower. He wants worm-free apples. I don’t worry too much about worms. I have a trained eye at picking time, and not that many customers, anyway. I do worry about my bees, however.

Elvis is allergic to bee stings, so I have to give him credit for being tolerant, and a good sport. Our parallel string-bean-shaped properties measure only a hundred yards across, and my honey bees regularly violate his air space. Of course he understands the importance of bees, especially to an orchard. Any grower would.

Even though Elvis can be passionate about apples, I should state that he can also be ambivalent. He’s comfortably retired, and his apple customer base is dwindling – dying off, really. The old-timers don’t come around like they used to. For Elvis, this is really a hobby, and some years he doesn’t bother to spray.

He used to spray Guthion – a potent organophosphate – for worm-producing codling moth, but I never had bee damage. Unlike me, Elvis is a fastidious orchardist, and he likes to keep his orchard floor mowed. No flowers – no bee kill. So other than at apple blossom time, my bees have no interest in his orchard. Even though he sprays 25 yards from my beeyard, as long as the spray stays on his side of the fence – and it always does – I never have a bee kill.

Sometimes I keep bees at home, sometimes not. Lately I’ve put them mostly in the Colorado high country during nectar season.

But during the Spring fruit bloom, I’ve always got some hives in my orchard. Last May, Elvis said, “Are you going to keep your bees here this Summer?”

I said, “Probably a few. Why?”

“Because I’m going to spray this year, and I don’t want to kill your bees,” he said.

“I don’t see where it would be a problem,” I said. Why would it be? It never had been before.

Then I forgot all about Elvis and spraying. I left a few nucs and a couple of hives on the property.

One mid-Summer morning while thinning my Golden Delicious, I noticed that the alfalfa was blooming in Elvis’s orchard. “That’s odd,” I thought. I wondered why he hadn’t mowed. I didn’t even think about spraying. I assumed all along that Elvis understood the connection between flowers and bees and spray. After all, I’d explained it to him.

It was later that same day that I heard Elvis’s tractor fire up, and that can mean only one thing. I can honestly say it didn’t hit me at first. My thoughts went from “Oh, Elvis is going to spray,” to “Hey! Wait a minute. He can’t do that!”

In less than a minute, I intercepted him in his driveway. I don’t drive over there unless something’s up. Elvis shut down his

tractor.

I never even asked which poison he had in his tank.

I said, “If you’ll wait until morning, I’ll have my bees out of here tonight.”

He gave me a look. “Well, all right, but I told you last Spring I was going to spray,” he said.

I said, “Yeah, but before you always mowed.”

He said, “Tell you what. You can move your bees, or you can mow my orchard.”

He didn’t say that in a mean way. He was pretty matter-of-fact. But it wasn’t the most diplomatic remark he could have made, was it? At this point, I considered saying absolutely the wrong thing, but I pulled back.

He said something about not mowing because we were going to lose the ditch due to the drought, but I didn’t press him. When you argue with your neighbor, you can never win.

I hauled my home bees to the high country, where they finished out a disastrous season with all the rest of my colonies. The home bees hadn’t done much on the first alfalfa cutting, but after the move, the second cutting looked like it might be full of nectar. Of course I’ll never know.

I’ll make sure Elvis gets a quart of honey this Fall. That way, he and Donna can talk about bees – and spraying – every time they spread honey on their toast.

I won’t take it over to his place, because I respect his property rights. I’ll catch him when he’s picking Red Delicious over by the fence. Maybe we’ll re-hash the story of the bear that ate Tony’s lambs. We never tire of that one. I can hand him that honey jar right through the wire fence mesh.

Good fences make good neighbors.

Ed Colby

Elvis

BOTTOM BOARD