



Christmas Chaos, by Lela Dowling

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

DECEMBER 2004 VOLUME 132 NUMBER 12

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Subscription Information

U.S., one year, \$21.50; two years, \$41. Newsstand price: \$3.50. 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), December 2004, Volume 132, Issue 12, is published monthly by The Root Candle Co., 623 W. Liberty Street, Medina, OH 44256. Periodicals Postage Paid at Medina, OH and additional mailing offices.

Advertising

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

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

POSTMASTER: Send address changes to BEE CULTURE, The Root Candle 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.


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Bee Culture The Magazine of American Beekeeping is



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Show & Tell



The Bee (X83) – \$9.95
Stunning photos. Excellent for school demos, fairs, kids of all ages. 27 pages, soft cover, all color.

Beekeeper's Year Wall Chart (X75) – \$13.75
Full poster size chart - great for demos and displays. All color, what, where and why.



Color Study Prints (X69) \$32.50
12 large color photos with lots of information on the back.

The Life Cycle Of A Honeybee (X126) – \$8.99
Stunning color photos throughout. Excellent information on the anatomy of the honey bee.

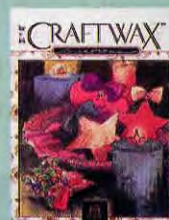


Life Cycle of the Honey Bee Wall Chart (X46M) \$13.50
Full poster size wall chart - great for demos, classes and displays. Queen, worker, drone all shown.



Bee Careful Handouts (X55P) \$10.00
8½ x 11 sheet with 'What Kind Of Bee Is That' questions answered. Package of 100

Hooray For Beekeeping (X128) \$8.99
Beautiful color photos throughout. This is an excellent book for school presentations or home schooling.



Craftwax Creations (X39) \$5.95
Advance uses and techniques using embossed craftwax or beeswax sheets.

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MAILBOX

September Swarm

I've been a beekeeper over 20 years and this is a first. First of all, this swarm should not have happened. That was my first thought because it was in late September. I was installing mite strips for Fall and watched the swarm issue from a hive. It settled on a peach tree in the yard. After finishing my strip installations, I proceeded to put foundations in frames and put them in an eight-frame hive I have. (I use a lot of these because I have had back surgery and these are a bit lighter to handle.) I put the hive body and bottom board on a stand back up with my other bees, then shook the bees in a container, installed them in the hive, closed them up and started feeding sugar water. The next day, I looked for a queen and there she was. A nice queen marked that I had installed in the Spring.

Secondly, the swarm shouldn't survive. Late and only about two pounds of bees and they had to draw out foundation, raise brood and take stores for Winter. They raised two cycles of brood in three partial frames before the queen shut down for Winter. I checked them all Winter long – November, December, January and February on warm sunny days by lifting the outer cover and inner cover and it always appeared to be about two pounds of bees. There was only about four frames of drawn foundation and on some warm days in late January and Early February, I fed them some sugar water. By being a late swarm, I didn't think they would survive, so no strips were installed. The first week of March, I had a warm day about 50° and sunny, so once again I checked the swarm and sure enough there was some brood and my marked queen. About two weeks later, a fellow beekeeper came down because he had some sourwood trees – two to three feet tall he wanted to set out for me. It

was warm and I wanted to install some mite strips. I pulled out the first frame with no bees to check the status of the swarm again. The next frame had brood and my marked queen and to my surprise there was another unmarked queen only about three inches from the other one. These two queens had to have been together from the start because they had not drawn any queen cells yet. I showed this to Mr. B.B., my fellow beekeeper, installed the strip, closed it up and started feeding. The second week of April, I added a shallow super to the brood chamber. That is the method that works best for me. One deep and one shallow for the brood chamber. The last week of April, I checked and there was only one unmarked queen. I added another super at that time with a queen excluder. On May 9, our club – Mountain Empire Beekeepers Association – had a work shop hosted by our Virginia state apiarist, Keith Tigner. My beeyard was used for the field portion of the work shop. I had told Keith about this swarm so he chose this as one to go through. It was full of bees and numerous queen cells. We also found the queen at this time. So it was expected to swarm. I couldn't split it because I had already had five swarms out of 16 other hives. Although I had put supers on them the first week of April and was out of equipment to put them in. I left them to swarm thinking I would have time to prepare a hive to put them in. I checked this hive after three days and found the queen laying. Three days later there she was still nice and big and laying lots of eggs and all queen cells were torn down. They never swarmed. This is the second week of July and I have taken three supers off and two more about full. Remember, these are eight frames instead of nine that I usually have in my 10-frame equipment, but that is till 40

frames of honey. That is about all I will get because it looks like no thistle flow this year. Remember I saw this swarm do things that it was not supposed to do by most beekeeping standards, but they fool you every time.

So are late swarms worth keeping? In this case it was. But all of this was caused by the beekeeper. Let's go back to September when the swarm came out. Remember I said I was there when it issued and knew which hive it came from so I was going to wait a few days and combine the swarm back to the original hive and cut out the queen cells. There were no queen cells but a nice marked queen. How could that be? I had replaced queens in the Spring of 2003 at two different times and my record keeping must have been a little lax and not marked as having been requeened. I had removed my old queens and installed my first batch two days later, removed those cages three days after that and did my second batch three days later. Remember, record keeping is important, but slip ups happen to all of us and sometimes it causes weird things to happen. The swarm shouldn't have survived and the beekeeper shouldn't have made a mistake.

James Rose
Max Meadows, VA

Roll Your Own

I have been experimenting with cardboard as smoker fuel for over a year. One of the complaints I get from others is that it takes too much time and effort to roll these up by hand. To overcome this problem, I set out to make a machine to do the rolling. The rolling is much easier and faster and makes a very tight roll. The roll, as is, will burn for over an hour and will stay lit if the cardboard is kept dry. If you want the same roll to burn over three hours do the following. Dip each end of

Continued on Next Page

MAILBOX



the roll into 1/8 inch of water and then hammer the corrugation holes shut. Put them in the sun for a day or two to dry. After drying, put the roll in a plastic bag for storage and don't open until needed.

Harley Crawford
Santa Rosa, CA

Editor's Note: If you would like a copy of Mr. Crawford's instructions contact Kathy Summers at Bee Culture Magazine.

A Beekeeping Legacy

Whereas we are fortunate to have grown up beekeepers' kids: We therefore proclaim in the wind-down season for Raymond K. & Lois Nicholson beekeeping enterprises, dba "Nicholson's Honey" that:

It was a privilege examining all those beeyards we looked for and found by you following your nose around the Minnesota country side. We learned no trespassing signs meant different things to fellow beekeepers. What were weeds to other kids instead were honey producing plants of an infinite potential to a beekeeper's kid. We learned about white sweet clover, yellow sweet clover, Alsike clover, red clover and goldenrod, basswood and buckwheat. The country side flora and fauna was either good for bees or not. What else mattered? To a beekeeper's kids alfalfa was a whole lot more than hay. While most kids saw four-leaf clovers as good luck we saw clover as honey making which was sweeter than good luck. We proclaim our everlasting gratitude to knowing what a swarm was, and what to do when we saw one (run

and call Mom). The joy of having queens on the kitchen counter, and bee packages delivered to the door is unique to beekeepers' kids. The seasons to us were honey flow and wrapping bees, in-between was a blur of honey and wax heating in the old brass boiler on the kitchen stove. The sweet smell of wood shavings of a beeyard in the midst of a Fall woods is something a non-beekeeper's kid would not understand.

Tar paper meant something to us that just could not be fully explained to anybody else. Sweet smells such as honey warming in the basement and then the Bee Go in the truck gave us a rare perspective on odors, good and bad. Taking a friend from the sweet smell of the house to the truck must have been a mind boggling trip into this unique world of a beekeeper's kid. We had an SUV before they were cool, only it was a panel truck, suburban, or whatever would haul kids and beehives, sometimes at the same time.

We are indebted to know that putting frames together is more than building houses. Our gratitude is boundless for the esteem we got when we could treat the neighbor's kids to a sample of fresh, warm dripping cappings outside the windows of the honey house. It was one time in a year that beekeepers' kids were heroes. We are grateful that bottling at our house was honey not hooch. Knowledge that honey can go *on or in* almost anything including sardines has made us much more broad minded epicureans. Who would ever guess what an air bubble rising in an upside honey jar meant to a beekeeper's kid? What kid besides a beekeeper's kid would walk through a grocery store and stop and turn a honey jar upside down. How many kids

know what propolis is? Knowledge like this is valuable in scrabble or if you are a beekeeper's kid.

It is with a mix of fondness and confusion that we grew up hearing the tap, tap of putting frames together in the "shop" and never saw any building projects result from all that hammering of frames and hives. Going to bed with the fresh smell of aluminum beehive paint gives new meaning to painting the house. Beekeepers' kids excel at the delicate art of Minnesota conversation, because we learned to talk about the weather in 13 different ways. We are proud that our Mom labeled jars not people. The scraping of comb honey sections was a comforting click-click clack-clack sound. How Mom juggled comb honey, kids, ironing, washing clothes at the same time is one of those sweet mysteries in life. It seemed that so much of this world was sticky, and still sticks with us. We are grateful for the county fair exhibits, the grocery store displays, the trophies and ribbons that we can vicariously enjoy. Beekeeping conventions were vacations of sorts. Detroit Lakes to us is more than just another Minnesota like. It was ice cream bars, a pavilion and picnics with rabbit, shoe-string potato salad, at a honey convention. No wonder we remember!

To know that you do not pull out a stinger, but scrape it out was not only a matter of interest but survival. Survival as a Nicholson kid was, if nothing else, exciting, and it has stuck with us. Together we have seen foulbrood, good queens, good and bad drones, good wintering years and bad ones. Good honey flows and gracious Summers of life, dry and bad Summers where all we got was honey dew.

So Dad before you hang it up, sell all the colonies, or retire from the enticing world of beekeeping:

Let it be known that your five kids are indebted to you for taking us along on your journey of sweet, sticky, stinging success.

Diane, Daniel, Janet, Sally,
Ronda

Diane Koranda
Duluth, MN

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INNER COVER



I'll bet that not too far from where you are there's a 10, 20 or 50 acre field that's been fallow for a couple years. Maybe it's your field, or your neighbor's. Lots of us live close to a field like that. Some, certainly, have nothing but asphalt and stop lights for 20 miles in every direction, but not many.

Now, imagine 20 or so acres of inexpensive, easy to grow, profitable honey plants

that you could make happen there next season.

You'll need the work of a tractor, planting bed prep machines, and maybe some kind of harvest gear – a neighbor's, rented or yours – because 20 acres is tough with a Sears rototiller and a hoe.

Even renting this doesn't add up to a big investment, though. Maybe some fertilizer (and a way to spread it) and the seed. And moving your bees close by. That's about it. You'll spend more time than money if you're doing the tractor work, and vice versa if not. Either way, it's not much of either.

We're not doing precision agriculture here. Just quick and dirty. I don't have 20 years to wait for a tree. Or 10, or even five. In two or three years this plot will probably be a development of houses or a Wal-Mart. And as much as I'd like to have acres of high-yield anise hyssop, for all the grief of the weeds and Winter kill, give me the more mundane and predictable annual clovers, sunflowers, buckwheat, or any of a hundred that meet the same need.

What do they need to be? Well, lots of blossoms, planted early, middle and late season for continuous bloom, intercropped or double cropped for multi-honey flowers on all of the land used, and perhaps enough of one or two of them to harvest and sell. Power Gardening, that's what this is. Planted thick to keep the weeds down, fast growing and rotated to keep pests and diseases to a minimum, some soil building in the process, and when done and plowed under, nothing but good green manure or compost and soil organic matter. Oh, and all those supers of varietal honey you harvested all season long. Land Based Honey Production is what it's called. Start planning yours now, and next Summer start a revolution. Go on, grow your own.

Did you try some kind of frame (wood or plastic) last season that had plastic foundation? And were you just ever so pleased with how well your bees did on them? Especially the first couple of weeks of their courtship?

Or did your bees seem to ignore that seemingly poisonous plastic, for it seemed, forever? Then, just to tweak you, did they build some of those beautiful, delicate, magically suspended sheets of free-form comb, perfectly spaced between adjacent empty frames? Maybe they did nothing in that super – no comb at all – all Summer long.

Well, help is on the way. Let's look at all the parts – the frames themselves, the way the bees use them (or not), and how you can help, a lot.

Start with how rigid the frame is. Most wood frames are more rigid than most one-piece all plastic frames and foundation. That's

not necessarily bad, but you need to treat them differently when moving them around.

How much wax was on the foundation? Typically the wax is sprayed on as thin as possible and almost always it's unevenly applied. Thinner than bologna sliced Company thin, as my dad used to say. Part of the sheet then is nearly bare, while the rest has drips and chunks. Pretty much across the board plastic foundation would do better if there was more wax on it to begin with. Why? To begin with, wax acts as an attractant, but it's also the primer for cell building. Bees mold the wax that's already there, whether all wax foundation or a wax layer on an embossed plastic sheet. Then soften it and shape the wax to conform to the six-sided ridges, starting the cells. This is called 'drawing' it, like bringing a pail of water up from a well, the wax cell side is 'raised.' This defines the shape and size of the cell. Then wax-building-age bees add more wax to the walls, drawing them further with the wax they are producing themselves.

Without a wax primer, and without a strong honey flow to feed those wax-building-age bees, the incentive to build cells isn't very strong, and the raw material – beeswax – is in limited supply.

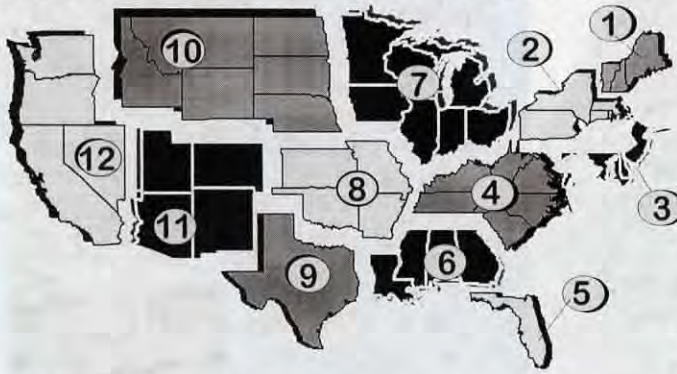
What about up and down spacing? Well, mostly this guy's frames don't fit in that guy's boxes. Close, yes. And some do, yes. But are you guessing? You bet you are.

You'll have some memorable stories of beeyard visits if you have frames that are welded top bar below to bottom bar above, especially if they tend to twist and bend. Loosening them, prying apart with hive tool or piano wire breaks comb, spills honey, makes a mess, starts robbing and helps you develop a spectacular new vocabulary. **Lesson:** get frames and boxes that fit together.

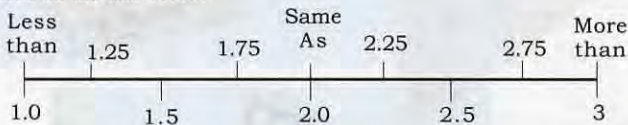
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Grow Your Own;
Plastic
Foundation Fix;
York Bee
Company

DECEMBER - REGIONAL HONEY PRICE REPORT



Our year-end survey had six questions for our reporters. Demand for this year's crop; their prices compared to 2003; profitability compared to 2003; colony expansion plans for 2005; product expansion plans for 2005; and pricing for 2005. Each question had a choice of 1) less than, 2) same as, or 3) more than, and each answer was scored. Each question for each region then had a calculated average. Values can be measured on the line below.



Region 1. Demand up a bit at 2.33; prices up considerably at 2.78; profitability OK at 2.38; colony expansion marginal at 2.22; along with price increase plans at 2.22.

Overall, across all regions, demand increased over 2003 (2.3), as did prices (2.3) and profitability was down a hair (1.99). Colony expansion remains steady (2.09), but product line expansion, at (2.2) is more positive. Price increase for 2005 seems barely lukewarm at (2.14).

Region 2. Demand unchanged at 2.0; prices up though at 2.75; profitability up a bit at 2.25; colony expansion, and product expansion both on hold at 2.0; but price increases up at 2.25.

Region 3. Demand in 2004 the same as 2003 at 2.0; prices down from 2003 at 1.67; but profitability up at 2.67. Colony expansions down to 1.33, while product expansion steady at 2.0. Prices increase a bit in 2005 at 2.33.

Region 4. Demand this year up at 2.33; along with prices at 2.33. Profitability down though, compared to 2003 at 1.83. No colony or product expansion plans as both remain unchanged at 2.0; but prices will increase at 2.5.

Region 5. Demand not bad at 2.33; but prices, at 1.33 lower than 2003; profitability, too is down at 1.5; no expansion planned at 1.5, and products only steady at 2.0. Prices may go down next year at 1.67.

Region 6. Demand healthy at 2.5 and prices up at 2.75. Profitability, though not healthy at 1.5, so, colony expansion plans are up to 2.5, as are product expansion plans at 2.5. Prices steady in '04 at 2.0.

Region 7. Demand up a fraction at 2.18, prices steady at 2.0, and profitability way down at 1.18. Colony expansion at 2.09, but product increase at 2.29. Price projections down a bit at 1.91.

Region 8. Demand up a bit at 2.25, and prices up over 2003 at 2.25. Profitability down compared to last year at 1.75, but expansion plans increasing to 2.67. Products to sell and price increase steady at 2.0.

Region 9. Demand healthy at 2.6, and prices up at 2.6. Profitability good at 2.6, and expansion of colonies, 2.4 and products, 2.4, healthy. Price increases next year steady, too, at 2.4.

Region 10. Healthy demand in 2004 at 2.75, but prices steady at 2.0. Profitability good at 2.5. Colony expansion unchanged at 2.0, but product increase planned at 2.6. Prices to rise a bit at 2.25.

Region 11. Good demand at 2.25, and prices increased last year at 2.5. Profitability in black ink at 2.14. No colony expansion plans at 2.0 but product, and price increases both at 2.13.

Region 12. Demand healthy at 2.33 and prices up substantially at 2.67. Profitability, though down at 1.67. Colony and product expansion plans strong at 2.33, but no price increases planned at 2.0.

	Reporting Regions												Summary		History			
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.		
Extracted honey sold bulk to Packers or Processors																		
Wholesale Bulk																		
55 gal. Light	1.12	1.00	1.25	1.25	0.99	1.13	1.24	1.40	1.12	1.10	1.36	1.31	0.99-1.40	1.19	1.11	1.40		
55 gal. Amber	1.05	0.80	1.04	1.00	0.83	0.99	1.21	1.04	0.88	0.85	1.25	1.20	0.80-1.25	1.01	1.04	1.27		
60# Light (retail)	123.33	111.93	89.50	91.25	110.00	120.00	112.57	100.80	120.00	123.77	149.00	113.75	89.50-149.00	113.83	105.52	98.12		
60# Amber (retail)	106.25	105.53	113.70	88.00	8.50	102.50	111.40	102.50	110.00	113.70	139.00	100.00	8.50-139.00	100.09	108.34	92.61		
Wholesale Case Lots																		
1/2# 24's	44.77	46.15	47.02	35.17	47.02	36.00	37.93	47.02	47.02	39.00	36.00	47.02	35.17-47.02	42.51	40.12	37.18		
1# 24's	63.28	59.03	57.60	50.77	51.20	56.00	59.72	60.80	51.85	77.76	79.75	68.40	50.77-79.75	61.35	61.38	58.50		
2# 12's	51.52	59.58	55.20	47.19	44.40	48.00	52.38	65.30	46.50	57.84	39.00	60.90	39.00-65.30	52.32	52.38	50.85		
12 oz. Plas. 24's	46.19	55.03	54.00	48.71	39.00	48.00	46.56	48.00	51.60	47.28	68.70	52.80	39.00-68.70	50.49	51.58	45.56		
5# 6's	50.47	62.98	57.08	50.81	57.08	60.00	58.67	55.00	57.08	61.86	75.00	72.00	50.47-75.00	59.84	64.38	56.53		
Quarts 12's	60.00	100.35	82.20	71.24	65.00	83.33	83.15	77.20	81.00	95.00	86.70	84.00	60.00-100.35	80.76	82.49	76.15		
Pints 12's	40.00	49.95	54.60	45.05	37.00	50.33	53.05	45.57	48.00	55.00	45.00	51.00	37.00-55.00	47.88	48.57	44.72		
Retail Honey Prices																		
1/2#	2.36	2.52	2.61	2.60	2.29	3.45	2.28	2.45	1.95	2.35	2.91	2.50	1.95-3.45	2.52	2.43	2.46		
12 oz. Plastic	3.04	3.02	2.85	2.97	3.57	3.50	2.90	3.42	2.99	2.95	3.45	3.30	2.85-3.57	3.16	3.09	3.07		
1 lb. Glass	3.68	3.29	3.60	3.68	3.25	4.00	3.67	4.13	4.00	4.10	4.06	4.05	3.25-4.13	3.79	3.84	3.57		
2 lb. Glass	6.75	6.01	6.37	5.50	6.82	6.99	6.00	7.00	5.32	6.41	6.35	7.25	5.32-7.25	6.40	6.48	5.97		
Pint	5.25	6.25	5.59	4.73	5.95	5.75	6.03	5.68	5.08	5.75	4.75	6.00	4.73-6.25	5.57	5.68	5.59		
Quart	8.92	8.55	9.50	7.90	7.95	8.83	8.56	8.71	8.60	10.75	8.31	10.03	7.90-10.75	8.88	8.68	8.53		
5 lb. Glass	12.71	12.70	13.50	12.27	13.14	12.00	12.33	14.50	13.14	13.32	13.56	14.99	12.00-14.99	13.18	12.85	12.20		
1# Cream	4.50	5.50	4.90	4.15	4.90	4.25	4.22	4.82	4.90	5.34	5.28	4.25	4.15-5.50	4.75	4.52	4.23		
1# Comb	4.83	4.41	4.25	4.50	6.47	4.50	5.54	4.66	3.99	5.00	6.25	5.50	3.99-6.47	4.99	5.00	4.85		
Ross Round	5.00	3.90	3.75	4.52	5.08	4.00	4.50	4.99	5.08	5.20	5.88	4.50	3.75-5.88	4.70	5.06	4.71		
Wax (Light)	2.50	2.58	2.15	1.90	1.25	1.98	2.30	1.50	2.50	2.19	2.17	2.53	1.25-2.58	1.67	1.83	1.43		
Wax (Dark)	1.85	1.60	1.93	1.73	1.10	1.93	1.85	1.08	1.95	1.68	1.85	2.00	1.08-2.00	1.35	1.53	1.10		
Poll. Fee/Col.	46.25	37.33	36.00	36.67	35.00	42.50	42.29	40.00	30.00	42.31	45.00	50.50	30.00-50.50	40.32	40.43	40.66		

AN ONLINE BEEKEEPING LIBRARY

The Hive And The Honey Bee

Jefferson's Declaration of Independence and Lincoln's Gettysburg Address are important enough, and old enough, that they should be available for free somewhere on the Internet. And they are – Project Gutenberg www.gutenberg.net has them both, as well as the complete works of Shakespeare and the King James Bible.

If you're a beekeeper, however, you simply can't find the key historical documents in your field on the web. There's not any Project Gutenberg for bees. Well, until now, that is. Langstroth, Doolittle, Quinby – these really are the Jeffersons and Lincolns, the founding fathers, of modern beekeeping, and you can now find them online as part of *The Hive and the Honeybee bees.library.cornell.edu*. This new digital library, currently at 10 volumes, offers access to the most significant works from the Phillips' Beekeeping Collection at Cornell, one of the largest repositories of apiculture literature in the world.

As a collector of old bee books, Mike Griggs knows that the market for them on Ebay is hot. And as their value skyrockets, these classics are increasingly being locked up in private collections and archives where getting to them is difficult. Moses Quinby's *Mysteries of Beekeeping Explained*, for example, has been out-of-print for almost a hundred years and runs about \$75 a copy on the used market. "Some beekeepers I've talked to haven't even heard of them," says Griggs, an entomologist and the former president of the Eastern Apicultural Society (EAS). Getting people in the bee world to discover and read such books is one of central goals of *The Hive and Hon-*

eybee, and Griggs has been one of its principal organizers and promoters.

The idea for this project came out of the 2002 EAS annual conference, held that year in Ithaca. One of the conference's highlights was a talk on famous beekeepers & their writings by University of Delaware apiculture professor Dewey Caron, who had been a grad student at Cornell under the late Dr. Roger Morse. The lively session, held at Mann Library where the Phillips books reside, allowed participants to leaf through and learn more about the treasures in the collection started by Everett Franklin Phillips over 75 years ago. The whole thing was so wildly popular that Griggs contacted librarians at Mann after the conference to discuss ways of building on the excitement generated by Caron's talk.

They came up with the idea of digitizing volumes from the collection and putting them online, a gesture very much in keeping with Phillips' belief in access as central to the library he created. In a 1925 article in *Gleanings in Bee Culture*, he laid out his argument for a central repository of the collective wisdom of beekeeping's elders such as Langstroth and Quinby. "I wish to create an accessible storehouse of our knowledge of bees and beekeeping," he said in summing up. And for a 21st century audience, wouldn't the Internet be the logical means for making that knowledge even more widely available?

In the Fall of 2002, EAS agreed to donate the first \$2,000 to digitize L.L. Langstroth's *Langstroth on the Hive and the Honeybee* (1853) and offered to match the first \$1000 do-

nated by the beekeeping community. Encouraging beekeepers to financially support such a project was also in keeping with one of Phillips' more ingenious fundraising schemes – he convinced hundreds of New York state beekeepers to set aside one of their hives for the library, with the first fifty dollars in profits from honey sales going right to the new collection's endowment.

In less than a year, EAS's challenge to help start the *Hive & the Honeybee* was fully met by a variety of individuals and the Chemung Valley, Finger Lakes, New Hampshire, Southern Adirondack, Susquehanna and Warren County beekeepers associations. The site went live in March 2003. "I think it's really neat to finally get Phillips' books to the beekeepers," says Griggs. "It only took us about 75 years to get his goal accomplished, but it's finally here."

What's in the corpus was determined by a careful scholarly review of the literature. A list of about 90 titles, ranked in order of importance, was generated and the top 10 were put on the web first.¹ Thus, the books currently available represent the cornerstone documents of modern beekeeping history. And their authors are something of an apiary all-star team:

- **L.L. Langstroth**, the father of modern beekeeping and inventor of the moveable frame hive still being used today. *Langstroth on the Hive and the Honey-Bee* (1853).
- **G.M. Doolittle**, whose invention of artificial cells earned him the title of the father of commercial queen rearing. *Scientific Queen-Rearing as Practically Applied* (1889).
- **Reverend Jan Dzierzon**, the father of modern European beekeeping. *Dzierzon's Rational Bee-Keeping* (1882).
- **C.C. Miller**, whose witty and conversational writing style made him one of the most widely read bee writers of all time. *Fifty Years Among the Bees* (1911).
- **Moses Quinby**, inventor of first practical smoker and the father of modern commercial beekeeping.

¹ A list of the books may be found on the EAS website at www.easternapiculture.org/programs/DigitizingList.shtml.

Mysteries of Bee-Keeping Explained (1853).

- **Henry Alley**, Doolittle's predecessor who came up with the first successful commercial queen rearing system. *The Beekeeper's Handy Book* (1883).
- **Everett Franklin Phillips**, who before coming to Cornell was head of the USDA's apiculture program. *Beekeeping* (1915).
- **A.I. Root**, founder of the A.I. Root Company and author of the best known encyclopedia of beekeeping: *The ABC of Bee Culture* (1879).
- **W. Augustus Munn**, whose bar and frame hive was an important predecessor to Langstroth's. *A Description of the Bar-and-Frame Hive* (1844).
- **Francois Huber**, a blind Swiss beekeeper whose "leaf-hive" facilitated some of the most important 18th century research on bees. *New Observations on the Natural History of Bees* (1805).

Dewey Caron was one of the reviewers for the list, and he views its contents as a history whose real value comes in being used by beekeepers. "Digitizing helps make the record much more useful," he says. "It expands from just scholars to others who might have interests and helps to enable them to gain meaningful access." This sentiment is shared by beekeepers around the world for whom reading the paper copies at Cornell or another beekeeping library is just not an option. "This is excellent work," says Peter Dillon, a commercial beekeeper in Manitoba. "It allows material of historical importance and information to be available to individuals who would not be able to access it due

to distance and cost."

The Hive & the Honeybee allows users to search through the full text of individual titles or every publication in the collection. There's a simple search, which is useful for single words or phrases like "queen" or "royal jelly," and a more complex Boolean search that allows you to search for multiple terms at once. A search like "swarming and June," for example, would find every page in every book where those two terms show up. Aaron Morris, vice president of the Southern Adirondack Beekeeper's Association, recently used the advanced search to nail down the exact wording of a favorite quote from C.C. Miller (to find it yourself, just search the site for *dynamite* and *swarm* - the quote succinctly demonstrates why Miller's writing was, and is, so beloved).

A work in progress, *The Hive & the Honeybee* will expand as funding permits. Recently, the Tampa Bay Beekeepers Association generously donated \$1000 and offered another thousand as a challenge grant through December 2004. "We hope to encourage other donations to this fine effort," says TBBA's Joe Petrella. If fully met, their donation and challenge will allow for 12 more volumes to be put online. This will include classics such as John S. Harbison's *The Bee-keepers Directory, or the Theory and Practice of Bee Culture* (1861), T W Cowan's *Waxcraft, All About Beeswax* (1908), and another work by Henry Alley, *Thirty Years Among the Bees* (1891). To find out more about this growing collection and how to support it, please email Janet McCue, the director of Mann Library, at jam7@cornell.edu or Eveline Ferretti at ef15@cornell.edu. **BC**

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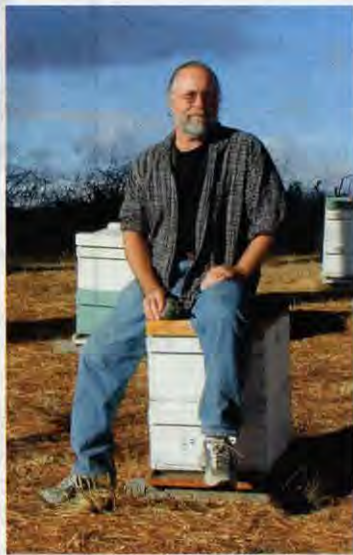
"Aging gracefully is not an option and (alternatively) . . . older is better."

When a honey bee queen dies unexpectedly or is removed unceremoniously by a beekeeper, the colony typically replaces her by producing an excess number of queen cells. The workers may attempt to rear 15-25 queen cells, although the virgin queen or queens that emerge early usually initiate the destruction of the remaining queen cells.

In part, this aspect of their behavior is quite understandable, as any additional virgin queens that emerge are potential competitors in the quest to head the colony and may have to be dealt with in a dangerous fight. Thus, taking action to kill potential rivals prior to their emergence would likely confer quite an advantage. Similarly, when a number of queen cells are about to emerge, it would seem to make sense for an early emerging virgin to selectively seek out and destroy older queen cells first, for the older queen cells will be the first to produce emerging queens, potentially deadly rivals. In a recent scientific paper, two researchers in Japan (Harano and Obara, 2004) detailed the results of a study that addressed just this question of virgin queen assessment of queen cell age.

The researchers initially set up an experiment with four queenless colonies. In each colony they placed 20 queen cells from each of two different age classes (three days difference in age) and then monitored the condition of the cells for three days from the day of emergence of the older group (day 13). Although the authors did not directly observe

fighters among emerged queens, they did find that in three of the four experimental colonies, queen cell destruction was significantly biased for the older queen cells. The researchers then set up a separate experiment to determine if it was indeed the virgin queens that were involved in the destruction and whether they preferentially attacked older queen cells. For this experiment, the researchers set up



individual cages with a virgin queen and two queen cells of varying ages. The experimental cages were placed in exc l u d e d queenless portions of queenright colonies, where the queens could be warmed and fed by w o r k e r s through the wire screen of the cage. The researchers made numerous timed observations until 48 hours post introduction and recorded the destruction of older vs. younger queen cells. The tested age groups included 12-13 day old queen cells, nine to 10 day old queen cells and seven day old queen cells. The researchers found that, in the comparison between pre-emergent (12-13 day old) queen cells and nine to 10 day old queen cells, the older cells were destroyed first by virgin queens significantly more frequently. In the comparison between the two younger age classes of queen cells (seven day old vs. nine

to 10 day old), the researchers did not find a significant difference between groups. Overall, the results of the two experiments suggested that virgin queens selectively destroy older queen cells. While the first experiment did not eliminate the possibility that workers were involved in destroying queen cells, the results of the cage experiment (experiment two) together with the fact that the main period of queen cell destruction in experiment 1 occurred simultaneously with queen emergence, suggested that virgin queens played a major role in eliminating their older rivals.

In another "age-related" research report, researchers from Australia examined the effects of queen age on their survival following introduction into honey bee colonies (Rhodes et al., 2004). In this case, it turned out that it was an advantage to be part of the older crowd. For the first two years of experiments, the researchers reared queens using standard methods and then provided 20 marked queens of each age class to two commercial honey producers to use in requeening 100 of their colonies. The queens remained in their mating nuclei until shipment and the ages of the queens provided to the beekeepers were seven, 14, 21, 28 and 35 days post emergence. Queens were introduced by the beekeepers into colonies within 36-48 hours of shipment. In year three a similar experimental design was followed, although the age classes varied such that 17, 24 and 31 day old queens were provided from mating nuclei and 24 and 31 day old queens were also provided from queen banks (having been placed in the banks at age 17 days). The colonies were inspected 15 days following queen introduction to determine the Introduction Survival Success

Continued on Next Page

(ISS) and then again 15 weeks later to determine the Early Survival Success (ESS).

The results of the experiments were very interesting, with the highest introduction survival rate (92.5%) being shown by queens that were 35 days old at the time of introduction. Nearly equal (90%) was the survival rate shown by 28 day old queens, so the authors suggested that the earliest age to catch queens from their mating nuclei for introduction into established colonies should be about 28 days of age. The researchers concluded that the low survival rates post-introduction (ISS) of queens aged seven, 14 and 17 days showed that these ages were not satisfactory for introduction into established colonies. Queens caught at age 21 days had an ISS of 82.5%. When an increased number of queens survived introduction (i.e., ISS was higher), the benefits translated into a higher survival at 15 weeks (higher ESS) as well. The results of the queen bank experiment were inconclusive, so the researchers were unable to determine if the use of queen banks to "age" queens would be a satisfactory alternative to aging them in mating nuclei.

In the Discussion, the researchers questioned the accepted management practice (in Australia) of catching queens from mating nuclei between 14 and 21 days post

emergence for introduction into established colonies. Although it would be useful to repeat this experiment using U.S. breeding stock and queen production methods, in the meantime we might benefit by considering these findings at face value. That is, it may be possible to improve the success of introductions and the survival of introduced queens over time by simply starting with more mature queens at the outset. In cases where queens of such ripe old age cannot be readily obtained, beekeepers might have to take younger queens and first introduce them into small nucleus colonies for the purposes of aging and increasing their acceptability to full-sized colonies. **EC**

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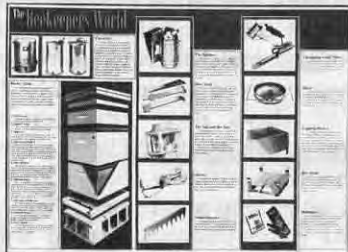
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Mark Winston

Media Calls

“Rules for the perfect story.”

20 July 2004 was the Perfect Storm, when my life and the media’s insatiable frenzy for stories intersected at the centre of three insect calamities. It’s not unusual for me to get calls from newspapers, radio, and television about insects, and they come in waves, often two to three in a day about the same story, then nothing for weeks.

20 July 2004, though, was different, with reporters sniffing out three separate stories breaking that day, on bees, mosquitoes, and wasps respectively. Each six-legged crisis had its own media-generated spin, and each provided insights into how the media quickly and collectively generate news.

I knew that 20 July would be a bad day when I woke up at my usual 5:00 AM start time, brought in the newspaper, and scanned the headlines. My still coffee-free brain snapped to attention with this one: “*Benign Bee Virus Turns Deadly.*” The sub-headline continued “*Large segments of fruit industry could be threatened if disease becomes widespread,*” and the opening line began with “*A bee virus that ravaged a beekeeping business in the Fraser Valley*”

The story emerged when a reporter somehow heard about a minor increase in the severity of Kashmir bee virus in British Columbia. We’ve had that virus for some time, but it seems to have become somewhat more virulent, with occasional piles of dead bees outside of a few hives.

This modest problem likely is *Varroa*-related, and scientifically might be pretty interesting. Practically, though, it’s a rain shower and

not a hurricane, with beekeepers having many more serious issues to deal with. This is more like a mild cold than a deadly infection, and “*ravaged*” would not be the first term that comes to mind.

Even worse, this intrepid reporter did go to the trouble to interview Paul van Westendorp, head of our Ministry of Agriculture’s bee unit, who went out of his way to tone down the reporter’s frenzy to turn a bee cold into HIV. Paul said things like “*Are we facing disaster? I just can’t see it.*”

Yet, this story took on a life of its own, and by mid-morning I had received close to a dozen calls from television and radio stations wanting interviews. I deflected them all, telling them this was a non-story they should drop like a hot potato.

Why the feeding frenzy? First, the story had a context involving chickens and beef. We had an outbreak of Avian Flu in the Fraser Valley a few months earlier, a real problem in which millions of chickens were destroyed to avoid an even larger North American epidemic. And, Canada’s cattle farmers were still reeling from a single case of Mad Cow disease a year earlier in Alberta that had immobilized our beef industry coast to coast.

Now could bees be next, with devastating impact on pollination and the fruit industry? That would be a story worth breaking, and any reporter that was first off the line with that one would be a made man or woman for life. No wonder my phone was ringing off the hook.

The phone calls, coming from across Canada, also illustrate another media reality: many reporters get their stories from the work of

other reporters, not from real sources. They read each others columns, listen to the radio, turn on the TV news, anything to quick-start stories they can ride for a few days, until the next frenzy.

I spent the morning throwing cold water on that one, and just when I thought it was over I got another call, this one from Winnipeg, Manitoba. It had nothing to do with bees, though, but rather mosquitoes, and the annual protests by citizens of Winnipeg who just don’t want to be sprayed with malathion every few days by fogging trucks.

The sprays are supposed to reduce mosquito populations, and it’s true that mosquitoes in Winnipeg often do reach epidemic proportions mid-summer. They also carry diseases such as West Nile Virus and Encephalitis, so there’s even a remote public health rationale to spray. Whether the sprays work or not is pretty arguable, but the impact of malathion on bees and other beneficial insects is not ambiguous: malathion and good insects do not get along.

This call was interesting not so much because of the issue, but rather for how the media trolls for “experts.” Things work fast in this world, unbelievably fast, and who gets on TV as the expert depends mostly on what warm body can make it into the studio by deadline.

These days, with round-the-clock news, deadlines are instantaneous, and since I couldn’t make it in for a few hours, they quickly lost interest and moved on. Never mind that I know quite a bit about pesticides and bees, the environment, human health, and

Continued on Next Page

“The best way to insure that the message getting out to the public is positive rather than a media-spun version is to write your own stories. Commentary pieces in the paper give you control over what gets said and how it’s expressed. The spin is yours, and the language precise.”

malathion, and had in fact reflected before about the science behind this annual intervention.

I had this experience once before, with mosquitoes, during the Apimondia conference in 1999. West Nile had just hit New York City, and the powers that be were ordering an aerial malathion bombardment across the entire metropolis. In the midst of dealing with 3,000 beekeepers in Vancouver, the New York Times tracked me down and asked me to write an opinion piece on the subject.

I was excited by the opportunity to write for such a renowned newspaper, and said that when the conference was over I would be thrilled to submit a piece, in a week or so. The editor paused for a moment, and rather formally replied that actually, they needed the piece within the hour.

Somehow I did it, with the help of a borrowed laptop computer and cell phone, but it woke me up to the pace of the media out there. Thoughtful, careful reflection is great in my professorial world, but you need to be able to accomplish that at warp speed if you expect to be published, interviewed, or otherwise present in the media-controlled public eye.

My third experience on that epic 20 July day was with wasps, this time on the rebound. I had been interviewed a few weeks before about a wasp outbreak in our area, a story that ended up on the front page of our local paper because of a frightening close-up photograph of a wasp that terrified even me.

This was television, where visuals are even more important, so we decided to do the interview early the next morning at my house. My back porch was honored to be the

home of an exceptionally active wasp nest, living beneath our siding, with a stream of wasps exiting at eye level right by our back stairs.

I have done many dozens of wasp interviews over the years, generally in August when the nests are large and outdoor barbecues in full swing. Last summer the weather was unusually hot and dry for a prolonged period early in the season, and nests were about a month ahead of their annual cycle.

Whatever the seasonal timing, the questions invariably follow a familiar pattern, reflecting public concerns but also misinformation about these stinging insects:

- Are we seeing more wasps this year? (It doesn’t matter whether we are or not, they always ask this one).
- How can we get rid of a nest? (Not “should we,” since there is little

awareness out there that wasps are beneficial).

- Can we keep wasps away from our picnic? (Here’s where questions about the home remedies often pop up, like the paper bag with a salmon head in it, citronella candles, and my favorite, an electric wand doodad).
- Can you move just a little closer to the nest, so we can get your face and the nest together in the photo/tape? (No problem, I don’t mind hundreds of really angry wasps pouring out of the nest to rip me to shreds).

Are there any rules of the road to keep in mind when contacted by the media, or when there is a public relations challenge concerning beekeeping? There certainly are many instances where bees and media collide: tainted honey, stinging, pesticides, killer bees, and more.

The best way to insure that the message getting out to the public is positive rather than a media-spun version is to write your own stories. Commentary pieces in the paper give you control over what gets said and how it’s expressed. The spin is yours, and the language precise.

Barring doing your own reporting, an ability to think on your feet quickly is essential for media relations. If you can’t come up with short, pithy responses that are so perfectly crafted that a journalist is compelled to quote you verbatim, then leave the interviews for others.

Be consistent. When an industry speaks with too many voices and perspectives, media smell controversy. That turns up the heat rather than cooling an issue down.

Be available. Reporters are working with tight deadlines. The voices that make it into the newspaper and on to the radio and television often are simply the bodies who call them back first, not necessarily the most qualified and professional.

What else have I learned from my media experiences? Well, never answer the phone on 20 July. **BC**

Mark Winston is a Professor at Simon Fraser University, Burnaby, B.C. Canada and will be a featured speaker at EAS 2005.



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The 18th Mexican Beekeeping Seminar (Seminario Americano de Apicultura) and associated 8th Apiexpo (Expo Apícola) convened in Villahermosa, capital of the Mexican state of Tabasco September 8 through 10, 2004. Besides beekeeping, this area is known for, among other things, its petroleum and aboriginal Mayan ruins (Palenque).¹ In addition, the region is famous for huge stone heads carved by the Olmec society, which had as one of its centers a town near Villahermosa, the site of famous ruins at La Venta.²

Hard by the Gulf of Campeche, Tabasco is the namesake of the famous hot sauce, which is manufactured and trademarked in Louisiana, but derived from the hot peppers native to this tropical land.³ Tabasco state in Mexico is populated almost exclusively by the tropically-adapted infamous Africanized honey bee. It is part of the gulf coastal plain, which also encompasses the states of Campeche, Yucatán and the territory of Quintana Roo. Taken together, these political entities make up Mexico's most important beekeeping region. Mexico (specifically the Yucatán region) lost its number-one world ranking in honey exportation to Argentina and China over the last three decades, but continues to export some of the most sought-after honey in the world. Given historically high prices for honey and the exclusion of China from the trade due to contamination issues, it was no surprise to see that a main theme of this year's seminar in Villahermosa was the international honey trade.

The Global Honey Market:

Dr. Francisco Ricalde at the University of Quintana Roo described the historical and current global honey market. The recent high prices due to Chinese and Argentine honey being all but eliminated from world trade because of contamination and other factors (anti-dumping) are also reflected in world honey statistics, according to Dr. Ricalde. FAO figures, he said, show 2002 world honey production was 1,270,000 tons, a growth of 9.9 percent since 1997. Some 35 percent of that honey was exported from producing countries, an 11 per-

Ma colm T Sanford

Mexican Beekeeping Seminar Convenes In Tabasco, Part I



"International Honey Trade was a main topic at this meeting."

cent increase in exported honey over the year 2000. Dr. Francisco's predictions indicated a slight increase in production to 2006 followed by a decline thereafter, as both China and Argentina become players again. Many things will affect the world honey market in the future, he concluded, some predictable others not so. Nevertheless, he said that in the future there should be stabilization in the world market that will reduce large cyclical variations often seen in the past.

Chinese Efforts to Clean up Their Act:

A presentation by an official of one of China's bee products industries (Henan Changge Jixiang Bee Products Ltd. Co.) revealed the depth to which the Chinese are attempting to change their production and marketing practices due to recent contamination incidents. They have implemented the following five (5) steps in order to assure the world that they are cleaning up their act:

1. Strengthening large-scale macro regulation with mandatory inspections and increased supervision. Delegations from other countries, including Mexico and the European Union (EU) have been invited to tour beekeeping establishments and encouraged to tell Chinese beekeepers what effects the use of medications such as chloramphenicol are causing in the world market place.
2. Increasing educational efforts by bringing in experts who instruct beekeepers on best management practices in disease and pest control. This includes the efforts of

Mexican officials who recently visited the country.

3. Implementing a system of guarantees and traceability through the use of small groups. Beekeepers have been divided into cadres of 10 with an appointed head. If the honey of any particular beekeeper in a group is found to be contaminated, the whole group is censured. In addition, a series of registration steps has been developed such that there is a paper trail from colony to container.

4. Establishing modern standards to ensure sustainability in Chinese beekeeping through standardized procedures. Beekeepers adhering to the standard are rewarded by higher prices.

5. Modernizing laboratories that analyze honey and further regulating production and marketing techniques through a bureaucracy, the National Inspection and Quality Control Agency.

In summary, the Chinese paper published in the proceedings concluded, "in the last 900 days, China has taken corrective action to gain control of its honey quality and today the situation is vastly improved. Whereas in 2002, of 636 samples analyzed, some 90 percent did not comply with EU regulations, in the current year, 97 percent of samples (354 in total) were in compliance. Mexico, therefore, should no longer be preoccupied with the quality of imported Chinese honey."

Chemical Residues in the Global Marketplace:

Dr. Klaus Wallner, University of Hohenheim, Stuttgart provided detailed information on the state of miticides and their effects on honey quality worldwide. Two general groups exist, water soluble (formic acid, oxalic acid, cymiazole) and fat soluble (brompropylate, fluvalinate, coumaphos). The former can be found in honey, but generally decrease over time and present little risk to wax. The latter, however, accumulate in wax over time, such that comb exposed to them must finally be eliminated from the nest and cannot be recycled into foundation.

In general, Dr. Waller concluded the use of fat-soluble miticides should be reduced and water-soluble products increased. This is based on his data published in the proceedings with respect to residues found in honey from Holland, Italy, Croatia, Austria, Switzerland, U.S., and Germany. A disquieting observation is that U.S. levels of the organophosphate coumaphos are vastly greater than those in Germany. This is in spite of the fact that dribbling Perezin® into the bee nest has been going on for much longer than the supposed more controlled release through CheckMite+® plastic strips registered in the U.S. Finally, he concluded that a great deal more work needs to be done to standardize treatments and residue levels in the nations of the world, ensuring a more unified, harmonious global honey market.

Dr. Wallner recommended the complete replacement of combs by virgin (uncontaminated) foundation annually as a way to ensure export honey quality. Two other statements by Dr. Waller deserve attention. One is that "silent robbery" exists among apiaries; in other words untreated colonies can be contaminated by bees from those that have been chemically treated. Another is that it is possible to produce honey without residues in "green" or "eco" apiaries by treating with either formic or oxalic acid along with biotechnical means such as drone trapping.

The Codex Alimentarius and HIPA:

Peter Martin, Chairman of the Honey International Packers Association or HIPA, provided information on world standards in accordance with what is known as the Codex Alimentarius, revised in 2001.⁴ He listed the current procedures in the European Union to monitor honey and said that so far neither Mexico nor China followed the Codex as revised. The former country permits antibiotic residues and use of high levels of pesticides, something that does not coincide with norms in most other countries. In China, two standards are available that are not implemented elsewhere: "superior product" and "acceptable product." The latter allows up to 24% moisture. He summarized the current activities in the European Union with respect to honey legislation and marketing, and concluded that labeling requirements will be heavily affected by the fact that the Union has been expanded to 25 countries and the number of official languages has increased from nine to 17.

Codex Alimentarius standards dictate certain levels of enzymes and other substances found in imported honey that has been stored for some time, often in larger containers (barrels). The storage potential of Mexican honey in the coastal plain was reported by Dr. Beatriz Méndez and associates in the Congress proceedings. Storage for periods can be a problem, especially in the tropics where heat can cause two changes in honey that result in a loss of value in the export market. These are a decrease in enzymes (diastase) and increase in the level of hydroxymethylfurfural (HMF). The investigators looked at three honeys in the region, a blend from various trees and shrubs (blooming in December 2000), and the principal sources known as tajonal, *Viguiera dentate*, (blooming in February 2001), and tzitzilche, *Gymnopodium floribundum*, (blooming in June 2001). Their conclusion was that the three can only be stored under ambient temperatures for four, seven and three months respectively without losing their export quality.

Dwight Stoller of Golden Heritage Foods, LLC discussed global

opportunities in honey marketing through a brand new association known as the Honey International Packers Association, or HIPA. He set the stage by listing some of the changes that have occurred in society in general as well as in the technological realm affecting world honey trade. Examples of the former include that only three percent of people in the U.S. now work in agriculture, 90 percent of all scientists that have lived in the world are alive today, and the General Agreement on Tariffs and Trade (GATT) and World Trade Organization (WTO) have reduced trade tariffs by 40 percent. In the technological arena, he described how faxes, computers and other paraphernalia of the "information age" have changed business practices in ways difficult to imagine just a few years ago.

Mr. Stoller, corroborated presentations by others at the Congress stating that world honey production is approximately 1.2 million tons, with 40,000 being sold internationally by China, Argentina and Mexico, generally to Japan, the United States and the EU. In addition, production and marketing has been materially affected by the appearance of new diseases and pests and increased chemical use by beekeepers, which has resulted in contaminated honey worldwide. He estimated that 280,000 tons (20 percent of world production) may in fact be tainted with antibiotic residues. The situation, he concluded, requires an unprecedented level of collaboration by those interested in maintaining a viable world honey trade.

This situation over the last few years, according to Mr. Stoller, has resulted in discussions suggesting that a world organization committed to honey quality was needed. Thus, at the World Apicultural Congress in Ljubljana, 2003 the Honey International Packers Association (HIPA) was formed. Its objective is to assure the quality of honey entering the global marketplace through improved beekeeping and processing practices. It is currently searching for funds to assist and educate producers and processors through web sites, courses, research and laboratory services.

At a symposium in Celle, Germany (April 2004) on preventing residues in honey, sponsored by Apimondia, Mr. Stoller reported that members of HIPA were involved in a working group concentrating on nine themes or topics: governmental activities, acceptable disease control methods, beekeeper training and attitude change, analysis of Codex Alimentarius standards, crop pollination and biodiversity, improving public awareness, analytical methodology, promoting industry cooperation, and use of HACCP (Hazard Analysis and Critical Control Point).⁵ Mr. Stoller closed his remarks by inviting interested persons in the Mexican honey industry to join himself and others in making HIPA a success.

Successes in Mexican Honey Production and Marketing:

Several "success stories" in Mexican apiculture were published in the Congress' proceedings. Rodrigo Armendariz Hernández of DEMIEL related his efforts to find other firms to join with in the complex task of marketing Mexican honey to the world. Thus, "DEMIEL is a member of the Mexican Association for Beekeeping Industry Development, AMDIA (Asociación Mexicana para el Desarrollo de la Industria Apícola) that promotes a fair-trading by gathering all of the parties involved in producing and marketing beekeeping byproducts."⁶ A fundamental strategy is to develop a line of products that could easily be seen as distinct and 100 percent Mexican in origin. The importance of promotion cannot be denied, according to Mr. Armendariz Hernández. DEMIEL, therefore, has participated in numerous international food shows. He concluded that it is important to integrate Mexican beekeeping, incorporating both producers and packers in order not to lose competitiveness either in the international or national markets.

Professor Héctor Arcos Hernández and colleagues reported on how the efforts of 20 beekeepers in Tlaxcala state resulted in the development of an "integrated enterprise" in beekeeping. This appears to be a legal term that has some of the same characteristics as a traditional cooperative might. The

goal is to demonstrate to the Mexican beekeeping industry the value of integrating (cooperating) to create economies of scale for purchasing in bulk, acquiring and training in new technologies and installing modern extraction and bottling plants. This also brought about the interest of a local school (Colegio de Postgraduados), which now has a demonstration center in apiculture training. In the fall of 2003, the enterprise sold 63 drums (one drum = 600 lbs), returning to each beekeeper a return of one-half Mexican peso (\$US 0.045) per kilogram (one kilogram = 2.2 lbs).

Agricultural Producers of the Lacandona Forest (Productores Agropecuarios de la Selva Lacandona) is an organization of indigenous people from Chiapas state that consists of 360 rural producers in 49 local communities producing coffee and honey. The objectives of this organization are to provide direct access to markets for the growers involved and to have an organic certification for both products. At the Congress, the Association reported an annual production of 250 tons of honey from 7,000 hives and some 2,623 quintales (one quintal = 45 lbs) of coffee. Other results of this effort include a new building complex with extractors and bottling apparatus, as well as a two 3-ton trucks used to distribute the products.

Mexican Domestic Honey Consumption:

Although much of the effort in Mexico is to produce and market honey for export, there was significant discussion at the Congress about the role of the domestic market. Professor Victor Pineda introduced a nation-wide campaign to increase domestic honey consumption. This is a cooperative effort between the Mexican government (Consejo Regulador de la Miel de Abeja Mexicana, A.C.) and the national beekeepers union (Unión Nacional de Apicultores).⁷

In each registration packet at the Congress was a form beekeepers could fill out to help the beekeeping industry raise 500,000 Mexican pesos (US \$45,450), matching what the national government

promises to provide through the Consejo Regulador de la Miel de Abeja Mexicana, A.C. This appears to be a similar campaign to that of the National Honey Board. It will design point of sale kiosks in service stations, publish recipes and other tips on using honey, and launch an international marketing effort through events such as SIAL, which convenes in Paris, France and elsewhere.⁸

There are 100,000,000 Mexicans, according to Professor Pineda, and per capita consumption is extremely low. If each person only increased their consumption by only a teaspoon or two a day, he concluded, this would materially eat into domestic production.

Other themes at the Congress included the culture of stingless bees (meliponiculture), honey bee pathology (diseases and pests), genetics (breeding), and pollination. These will be covered in subsequent articles. **BC**

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Dr. Sanford is a former Extension Specialist in apiculture at the University of Florida. He publishes the APIS newsletter, <http://apis.shorturl.com>

W.A.S. IN MONTANA

New Pesticides, Pesticide Label Rules and Diagnosing Pesticide Kills led the program

As usual, the 2004 Western Apicultural Society Conference brought out the warm weather – about 10 degrees warmer than the normal eighties in Missoula, Montana. Dr. Jerry Bromenshenk was the host, and featured a variety of topics.

Jerry had one of the “Frankenhives” at the apiary near his office and the meeting location. A Frankenhive is a nuc (1/4 size of normal hive body) that has up to 96 thermistors imbedded in it. Connected to a computer, hive temperatures can be taken every few minutes, 24 hours a day. In an empty nuc box, the temperature increases from the top down as the sun warms up the box. In an occupied nuc box, morning temperatures are a bit low, reach “normal” by mid day, then get a bit warmer only at the bottom of the hive in late afternoon, then cool off at sunset. The temperature differential observed is about 0.5°C. It appears that the bees do an excellent job of keeping the brood nest area at a level temperature all day. Early in the six year study, one side of the hive seemed to get warm daily, but that turned out to be an artifact due to heat being brought in from the outside by sunlight-heated thermistor wires.

Little temperature spikes (two to three degrees C) were seen daily on days preceding swarming. When the swarm issued, there was a quick two to three degree increase in temperature throughout the hive that lasted for 10 minutes. During that time worker bees were running all over in the hive, trampling nurse bees that tried to hold their ground on the brood combs. The temperature receded back to normal in about 20 minutes after the swarm left. Other observations that Bill Madsen and Jerry have noticed are: honey bees will regulate temperatures in queenless hives, as long as there is brood present; colonies of honey bees being moved on trucks will regulate their temperature only if they do not become “dry” – moving air and some water evaporation really help. When the truck stops

for fuel, hive temperatures begin a steep climb, unless water is sprayed on the hives. So, Jerry is thinking about adding a “drip line” of misters under the hive covers for moving bees on trucks in warm weather.

When the researchers introduced a small volume of hot air into the hive, the heat registered on the equipment, but it was moved, nearly intact, to a corner of the hive very quickly – too quickly, in fact, to have been accomplished by fanning. If and when Jerry gets a bit of free time, he and his co-workers are going to try to determine how that heat is moved. They have seen some really different behavior by bees in the area of the heat, but they have not been able to determine for sure what the bees are doing to move the heated air.

Emphasis on the Environment

The first afternoon, Jerry began the session with a presentation by Gabe Patrick, head of EPA’s Office of Pesticide Programs. Gabe has the unenviable job of documenting the positive effects that EPA pesticide programs have had on the environment. Actually, it seems that atmospheric and aquatic environments and animals tend to be more amenable to monitoring than do terrestrial organisms, other than plants. At a meeting in early May, Gabe attended a one-day session on how honey bees, and other social and solitary hymenopterans, might be used to demonstrate environmental changes. One of the biggest problems that came to the surface was determining what and how to measure the environmental parameters. We have very little field data on any of these animals. To prove that things are getting better or worse, you need to have data to compare. After hearing a day of pollinator biology, a “contracted staff” was going to get back to Gabe with a plan on how to approach this project. He hasn’t heard from them, yet!

Unfortunately, most of the attention that EPA programs get is on the negative side. That particularly seems to be the case with honey

bees. A number of audience members had, or are continuing to find, losses of honey bees to insecticide applications. Since the labels on the insecticides tend to carry language that prohibits use of the chemicals where they will kill honey bees, the question is, “Who is supposed to be enforcing the labels?” EPA is ultimately responsible, but enforcement has been delegated to the states. And, that is where the problem lies. Enforcement varies immensely from state to state, and at times it seems that local economic considerations outweigh honey bee health. That sends the issue to the courts, where politics play an important role. Although not mentioned too much at this meeting, there is an attempt being made to exempt bee warnings from labels of insecticides used to kill adult mosquitoes. Until West Nile Virus runs its course, and individuals are no longer becoming infected and in some cases killed, people aren’t going to worry too much about what else besides mosquitoes may be killed when the public agencies are fogging or spraying to protect their clientele.

Neonicotinoids – the Newest Class of Insecticides

Neonicotinoids are called “environmentally friendly” by the companies that sell them. Nicotine is extremely toxic, but the neonicotinoid analogs are much safer to handle, persist in the environment much longer than the original botanical, and tend to become systemic in the organism that is treated with them. For some reason they are extremely toxic to aphids but appear to have no detrimental effects on *Lygus* bugs, another plant sucking insect. The question is, “What do they do to honey bees?” The Europeans have devoted an enormous amount of effort toward trying to determine what, if anything, the neonicotinoids do to bees in the trace amounts that tend to occur in pollen and nectar. While European beekeepers are convinced that exposure to contaminated plant

Continued on Next Page

products leads to colony dwindling and death, laboratory and field studies have not yet backed those claims.

Gabe has access to the company data on the currently registered neonicotinoids. There are a couple that seem to be relatively harmless to honey bees. At the other end of the spectrum are those that are highly toxic to honey bees that contact the wet spray or residues for up to three days after application. Studies conducted by and for the manufacturers of these products have not determined any detrimental effects from exposure to nectar and pollen containing trace amounts of the systemic insecticides. It was interesting to note that a study conducted on rape sprayed with clothianidin demonstrated 1 part per billion (ppb) in nectar, but 8.6 ppb in the honey stomach. Currently, in conjunction with the Canadians, studies are being conducted to determine what, if any, effects on eggs, larvae, adults, and hive production 130-day or longer exposure to neonicotinoids has on honey bees.

Better Pesticide Labels

Gabe finished his presentation by describing an effort to re-design insecticide labels to allow better decisions to be made for their use. The idea is to explain on the label how long the insecticide will be toxic to honey bees that visit the plant after the application is made. The "Residual Time" might be minutes or days. The problem is, there are no standard environmental criteria for conducting the residue experiments. A chemical applied to an alfalfa field in the Central Valley of California is going to be irradiated strongly, heated significantly, and dried to a crisp. The same chemical sprayed on an alfalfa field in New England may be protected by a heavy cloud cover, kept quite cool, and the humidity can be very high for many consecutive days. So, you would not anticipate that the residue would break down at nearly the same rate in New England as in the desert West. So, how many labels have to be written for the same product? How can you predict the weather? I do not envy Gabe in either of his roles: providing proof of how EPA programs have enhanced the environment or developing labeling that will allow effective use of insecticides to protect crops while simultaneously protecting honey bees.

Jim Bach, former state apiarist

in Washington State, shared a few comments on what you see in the field with honey bee kills due to insecticides. If the chemical is toxic to foraging bees, dead bees accumulating around the hive on the ground are apt to be older bees, with noticeably ragged trailing edges on their wings. They tend to accumulate in front and somewhat to the sides of hive entrances. If tracheal mites are the problem, dead and dying bees tend to be scattered much further, with some occurring behind the hives. If the bees on the ground are young bees, then you have to take a serious look at the pollen stores. Lack of pollens will lead to starving young bees dying in front of the hives. Besides dead bees "out front," poisoned bees tend to be disorganized, form "patches" of clustered bees inside and outside the hives, and often there are dead bees clustered around the edges of outside combs. Bees dying with their "tongues sticking out" is not a very good diagnostic sign of poisoning. Dan Mayer said that in his experience 20-40% of naturally dying bees do so with their tongues stuck out. In Washington, there has to be an estimated loss of at least \$1,000, or at least a pint of bees per colony, before the state feels that an analysis is justified. [Author's note: Our experience with a bee kill, at our "control" location in a pesticide study, demonstrated that a "light" (handful) kill of bees in front of the hive equated to four frames of bees missing during a thorough hive examination. With 2,000 bees per frame, we lost about 8,000 bees and that might have been a pint, if we could have found them all.]

A Note on Bears

Montana, like other mountainous regions of the West, raises a lot of bears, both brown (black) and grizzlies - the campus mascot. Being naturally attracted to nests of insects, effective bear fences are a must in this area. Larry Freight, as much cowboy as fence expert, shared his thoughts and experiences with bear fences. His most important message was that for a bear fence to be effective, it really has to pack a wallop. For that to be true, the fence needs a really good charger like the Gallagher from New Zealand with at least 0.7 joules. The amperage is more important than the voltage (less expensive US chargers tend to be higher in voltage, lower in amperage). With his system, the wire length doesn't

matter. Obviously, there must be a good "ground" for the bear to stand on. On a dry site, Larry suggests welded wire panels for the ground. The fence, itself, should be six stranded to an upper height of 42 inches. Bears are a lot taller than that, but they come in on all fours and you want to zap them in the face. The fence posts should be fiberglass rods with holes drilled through them for the wires. Wood posts can be used in corners, only. Insulators will be cuffed by bears until the strands are down. Steel posts short out after the bears knock off the insulators. Weeds may short out the fence for a short while, but they become dehydrated by the discharges and wilt pretty quickly. Montana Fish and Game has a free video tape on bear fences that you may obtain through Jerry's Website www.beekeeper.dbs.umt.edu/bees/

Bees in Space

Bob Madsen is a devoted supporter of the Native American colleges in Montana. He has helped a number of them establish excellent science programs and he interacts with the students whenever he can. When NASA was soliciting for projects for the Reduced Gravity Student Flight Opportunities, Bob rounded up some students and the "BeeGs" were selected to fly their experiment on the "vomit comet." That is a big jet plane that climbs up, then dives, over and over, again. On each dive, the G forces approach zero. The students and anything else not bolted down start floating around in the plane.

The experiment was to see if *Osmia lignaria* (no fear of stings, which was not the case with honey bees) could learn to fly under non-gravity conditions. For most of the experiment, the extra G forces pinned the bees, motionless, to the floor of the cage. But, late into the flight some of the bees were crawling around pretty well, despite the added pressure. The first few weightless flights were haphazard, with a lot of wall crashing. Instead of changing bees, as planned, the same bees were left in the cage for many cycles. After gaining some experience, the bees were able to fly from one spot to another quite well in weightlessness. Turning corners seemed a little rough, but it was obvious that the *O. lignaria* had adapted to flying under zero gravity conditions. It is hard to imagine how that ability can help them on earth. **BC**

During The Summer of '04

BEEKEEPING PROHIBITED

Rache Mendell

In the city of Crestline, Ohio bees were to be banned.

June 28

Dave Duncan, beekeeper and licensed pest controller, walked into the office of *The Crestline Advocate* to pick up a check for sealing the Polito house against bats.

"You might be interested in this," said Kim Polito, editor and owner of the local newspaper.

"What is it?" asked Dave as she handed him a copy of Ordinance 2619.

"They had the first reading last night," she replied.

"They" meant the Crestline City Council with which Dave had a good relationship. He helped the city with its pest problems (spraying the trash cans before Harvest Festival, ridding homes of wasp nests and raccoons, etc.) and had been at many of their homes. The last time Dave had a run-in with council was when they forced him to tear down the historic building on his property.

The ordinance, titled "Beekeeping Prohibited," seemed to target Dave. He was the only beekeeper within the city limits. Bees were his way of life, and he couldn't let the city take that away from him. He resolved to do everything he could to fight the ordinance.

June 30

Dave called city hall, got names of the members of the legislative committee and started making calls. He had two weeks until the next

council meeting to get his questions answered and to figure out a plan of action.

He asked one of the members of the council if it was possible that

director who explained if the ordinance used the words "public nuisance" there must have been a complaint.

Dave was hurt and confused. No neighbors had complained to him about his bees. No one from the city (building inspector, police, fire, etc.) had spoken to him. In a town of 6,000 people, the common courtesy was to go talk to your neighbor if you had a problem with something he was doing.

In the days following Dave put up a sign asking for the removal of the safety service director whom he thought was responsible for the writing of the legislation. Maybe something would happen, he thought. Maybe the person who complained would talk to him.

His sign did bring people to Dave's home, people with complaints of all kinds about city hall. Over 100 people signed his petition. Then Dave called *The Cleveland Plain Dealer* and asked if they were interested in his story. The editor took down the informa-

tion.

Tom Patterson from Colorado heard about Dave's problem via the Internet and suggested Dave urge his city council to draft a realistic ordinance in favor of beekeeping with limits, keeping public safety in mind. He sent him a copy of the ordinance on the books in Colorado.



Dave Duncan

his case could be grandfathered in. He hoped his long standing in the community would hold him in good stead. The answer he received was a "public nuisance" could not be grandfathered in and could be dealt with immediately upon passage of the ordinance.

Dave then spoke with the law

The Council Chamber was packed to standing room only, but three council members didn't show.

"You have to get on the net and see all the talk," Tom added. Dave, computer-less ("road kill on the information highway" as he likes to say), asked his business partner, Ellen Harnish, to give him a copy of the comments.

Sonny Barker, bee inspector for Richland County, encouraged Dave to show up at the next council meeting prepared. Sonny wrote a speech to read before the council about the general importance of beekeeping to the town and to the local agriculture. Dave wrote an explanation about the importance of pollination to town gardens and nearby farms. Ellen Harnish researched the odds of getting stung by a bee and the further odds of dying from a sting.

The Cleveland Plain Dealer interviewed Dave and put the story on their Internet sight. Local NBC and ABC stations picked up the Plain Dealer's article and also interviewed Dave. TV68 out of Mansfield and the *Mansfield News Journal* followed close behind.

People in town stopped Dave as they praised him for fighting against the proposed ordinance. The weekly *Crestline Advocate* contained letters to the editor e-mailed from all other

the United States and as far away as New Zealand, Australia, the Philippines, and one from the editor of a Swedish bee journal, encouraging Dave in his struggle to keep his bees.

July 11

Sonny got a call from one of the city crew to meet an hour before the July 12th meeting to redraft the ordinance. After a short conference with Dave he told them they would be happy to work with council on the wording of a new ordinance AFTER the first ordinance was dropped.

July 12

The council chamber was packed with standing room only. Three council members were absent that evening.

Strangers came up to Dave and introduced themselves. Dave's mother and sister were there to support him. People were filling the chairs waiting for a chance to speak before council or to see how the council would reply.

(In the agenda of each meeting of city council meeting is a section between the reading of the minutes from the last meeting and petitions, memorials and communications. It is called

ORDINANCE NO. 2619 AMENDING THE CODIFIED ORDINANCES OF THE CITY OF CRESTLINE by amending Chapter 505 and adding the Beekeeping Prohibited. WHEREAS, The City of Crestline Codified Ordinance Chapter 505 to be amended.

WHEREAS, adding section 505.16 to Animals and Fowl

WHEREAS, the City of Crestline recommends that adding this section to read as follows.

505.16 Beekeeping Prohibited.

(a) No person shall keep or harbor any bees within the corporate limits of the City of Crestline.

(b) Any beehive used or occupied by bees is hereby declared to be a public nuisance, and it shall be unlawful to keep or maintain any such hive within the corporate limits of the City of Crestline.

(c) Whoever violates any of the provisions of this section is guilty of a minor misdemeanor. After the notification of subsection (b) hereof and the expiration of ten days, each day such nuisance continues shall be a separate offense.

NOW, THEREFORE be it Ordained by the council of the City of Crestline, Ohio, four (4) of the members elected thereto concurring: SECTION I the following sections are hereby revised.

"Voters and Taxpayers to Address the Council:")

Fourteen citizens spoke that night on various concerns. May Weaver, long time neighbor of Dave, told the council she was there for Dave's bees, saying, "Dave's bees should stay."

Sonny Barker, though a beekeeper living outside of the city limits, educated the council on bee facts including bees forage for five miles to where they please, and they are beneficial. He asked the council what kind of bees were targeted in the complaint, wild or domesticated. He told the council the ordinance was poorly written and should have contacted Dave and then the Department of Agriculture before beginning the ordinance project. Sonny added persons allergic to bee stings should carry precautionary kits with them, as was the case with his sister.

Crestline City Hall



Dick Towers said he didn't think the ordinance was right, "There have always been bees in Crestline." He continued to say bees were beneficial and the town needed them for pollination. He also stressed, "The small businessman has a rough row to hoe. Let's try to help the guy a little bit." He added the fact that Dave's bee's pollination was a "free service."

Jane Beck was concerned because it seemed only one person was being targeted with the ordinance. She reminded council Dave provided his pest/animal control service to the city and the issue should have been researched first.

Ellen Harnish, partner with Dave in the business "Beeology", presented statistics concerning insect stings. In the year 2000, 54 died from insect stings. During that same year only one in over five million died from a honey bee sting.

Dave Duncan presented his experience in educating elementary school children about bees both in the classroom and Malabar Farms, talking to thousands of children each year.

"My mistake," he said, "was I guess I should have been teaching more adults about honey bees."

He then told council none of them had spoken to him about the complaint(s) and none of his neighbors had either. He added other towns have enacted legislation that protects the beekeeper as well as the public.

Mike Rosander, after learning about Dave's situation on the Internet, came from Westlake, Ohio to present his finding on honey bees being territorial and naturally displacing wild or aggressive bees. He suggested a six-foot screen to get the bee's flight path above the human path.

The ordinance received a second reading. The mayor then explained no action would be taken until the third reading.

July 26

The chambers were full again after the overwhelming support at the July 12th meeting from residents and friends for Dave to keep his bees.

Mike Sharp asked the council to consider an observation hive to be installed at the Crestline Public

When the time came for the third reading, it died for lack of a motion.

Dave's Advice

Steer clear of problems:

- Out of sight, out of mind – If the hives are not visible, probably no one will complain.
- Give honey to everybody – Create good relations with your neighbors now. Make sure people know who you are and what you do.
- Protect yourself – Enact beekeeping legislation in your town for *your* protection.
- Know fear – Understand citizens are generally afraid of city council and might not want to speak up.
- Create respect – Do things for the community and make sure people know who you are.

If you have a problem:

- Attract attention – Use the media (newspapers, TV, radio) to tell your story. You may also want to call a lawyer.

Be persistent – Most citizens give up after their initial contact with a city council. Be there at every meeting. Put pressure on the council by continually asking the same question until

you get an official answer. Remember, you elected them.

Dave said he was lucky. Lots of people stood up for him, helped him out and stood by him when the trouble started. Dave never wants to go through this experience again, but hopes it has taught the community to be watchful.

Dave Duncan has been keeping bees for over 20 years and currently cares for 100 – 150 hives. He sells bees in the spring and teaches beekeeping to new beekeepers. He is on the board of directors of the Ohio State Beekeepers Association, is president of the Richland Area Beekeepers and is a member of the Tri-County Bee Association. Dave has talked at many Ohio bee clubs on topics including wax working, soap making, candle making, and honeybee removal. Dave also does demonstrations all over Ohio while selling his line of products (soap, hand cream, lip balm, honey and candles). Dave has a pest control business (He is a certified, licensed and bonded pest controller.), but honey bees are his life.

Library for the education of Crestline residents as to the benefits of honey bees. He also offered to donate the money for the installation.

When the time came for the third reading of the ordinance, it "died for lack of a motion to read" and was sent back to the legislative committee for further consideration and a possible rewrite.

"August 2, seven o'clock," said the president, "Clear your schedules."

August 2

After much discussion concerning how things were handled with the beekeeping prohibited ordinance the following facts came to light.

There was one "legitimate com-

plaint" from an elderly lady (at the time of this writing still unknown) who was afraid to sit on her porch for fear of being stung. No written record of this complaint exists.

One of the councilmen publicly apologized for not coming to Dave first, before the writing of the ordinance. "He has done a lot for this town. He should not have been treated this way," the councilman said.

It was then agreed, the council would drop the ordinance and Dave would put up a barrier around his beehives.

August 6

The council officially killed Ordinance 2619. **BC**

Christmas In The Beeyard

James E. Tew



It's Christmas! Why aren't you wrapping gifts and preparing for the events that are related to this special season? Yet, here you are – reading bee articles (and worse yet, here am I, writing them). For all that beekeeping has meant to me in my life, my bees and my Christmas season have never really formed a relationship. Indeed, this is my first article even considering the Christmas season. What's with that?

It's probably just me.

It's probably just my personal Christmas season that is bee deprived. I am the sole beekeeper in my immediate family – no one else. So how can they give me anything bee-related that I didn't get years ago? What book can they buy me that I don't already have? They don't have a clue how to buy a queen. Consequently, at Christmas, I can count on *not* getting anything bee related from my relatives and I certainly don't give anything bee related to my non-beekeeping family. That's just my Christmas.

But if I ask what your Bee Christmas experiences have been, by the time you get the information to me, the season is long gone so writing about the Christmas just past during the following March is

unfulfilling, therefore; I essentially never write about bee Christmas experiences. As it were, the Christmas season is trapped by its very seasonality.

Maybe its the wintertime.

Beekeeping is a warm season thing for most of us. At the time of Christmas, our hives are dormant. There's not really much to do with hives. I suppose you could get a hive full of bees for a gift, but it would be difficult to make the purchase in cool months. Certainly you could get a new empty hive, but that would be somewhat of a downer something like getting snow skis in July. In my experience, there are only a few things about beekeeping that really fits into the Christmas season. More about that in a bit.

The Ghosts of Christmases Past

Though not specifically related to bees, I have many warm memories of my past Christmases. When I put up the tree each year, the evergreen aroma in the living room is once again the aroma in the living room of my boyhood home. It's the smell that would hit me on those early Christmas mornings as I would quietly go check out my gifts. I can honestly remember the excitement of seeing the soft outline of a

Western Flyer, 24-inch, balloon-tired bicycle in the soft shadows of the predawn light. And though it is now severely worn, I still have my Lionel electric train. I clearly remember the year that I got my A.C. Gilbert Erector Set. At the time, I didn't have a clue what it was, but that gift went on to become the most instructive gift I was ever given. I still have it but I've had to find some replacement parts. I can still remember the tink-tink sound of Erector Set parts going up my Mother's vacuum as she cleaned the floor after I thought I had picked everything up. But, thanks to eBay, I once again have a complete set and through the years I got several more. Silly me. I always thought that my kids and even my grand kids would enjoy this educational toy as much as I did, but it has never happened. The Erector Set is uniquely mine. My only moment of Erector Set glory involved my youngest daughter, Erin, in grade school. She and I, using Erector Set parts, improvised a model nuclear power plant. We even added dry ice for smoke in the cooling towers. It really was clever. I joking said that if we had some fissile material, we could actually make electricity. (I'm kidding, I'm kidding – before some secret agent person confiscates my toy.)

Continued on Next Page

Christmas is a time of reflection and visitation

For many of us, Christmas is a time of visiting relatives and decompressing – reflecting; being with family, sociable and polite. Many years ago, before I had children of my own, while in the midst of the white heat of bee fever, I experienced a bee-Christmas epiphany that I would like to review here. It's a special memory to me even today. I had time off from work. I had the passionate interest in bees. I could barely contain myself though the breakfast time and subsequent family Christmas time together. My Mom was insistent that I formally follow all the requisite family protocol. I did. But at the very first moment – the very first moment – I crept away to my Dad's shop where I had previously stacked a pile of pine lumber that I planned to cut into frame top bars. I started up the saws and began making the repetitive cuts. As I recall, there was some insane number of cuts to be made – something like seventeen per top bar. I barely stopped for a full Christmas lunch. You could pick me from the Christmas lunch bunch for I was the one covered in pine sawdust. Then back to the saw room I did go. By mid afternoon, I had a pile of top bars cut out and many, many more to go. *Then, with no warning, from no where, it hit me – a flash of sanity.* "What am I doing out here? This is crazy. It's Christmas!" Like one waking from a dream, I clearly saw that I had worked the better part of Christmas day building top bars that I could have bought for approximately half the price that I paid just for the lumber. I needed that awakening. I loved beekeeping then and I love it now, but it was my first awareness that I needed to be more civilized and meter my passion. I needed to pace myself. The next day, I finished the top bars and have not built more than a dozen since that time. One of my few significant bee-related Christmas memories.

The Ancillary Bee-Christmas Experience.

But there are people out there who get bee-related Christmas gifts who are not beekeepers. For the past sixteen years, my lab has sponsored a Christmastime honey sale. We have conducted the sales

on the Ohio State University campus at various sites. Initially, all the honey products were produced and packed at my lab, but as the sale has grown, we began to buy honey. We simply can't make enough honey to meet all our needs. Plus people have grown to expect honey of different flavors. Orange blossom is an example. It is common for vacationers to Florida to pick up some orange blossom honey and then ask us for the same product as they use up their supply.

A short story – a few years ago, a pensive buyer finally selected a two-pound jar of orange blossom honey and made payment. He suddenly turned back to ask me where the orange grove plantings were located in Ohio. Initially, I thought he was jerking me around, but I quickly realized he was serious. I had to tell him the honey came from Florida (which I assumed would be obvious to the world.) He was politely surprised. I offered him his money back or a different fla-

vor, but he elected to keep the product – just more satisfied Christmas honey sale customer.

In past years, we've built crates for honey jars of various sizes. Gift packs. Candy. Cremed honey – in several flavors and beeswax candles of all shapes and sizes. People buy these products with a degree of eagerness and we know that it's going to be a gift for someone's Christmas. *(I suppose I can tell you that I would be somewhat deflated to be given a honey gift pack for Christmas, but I suspect that's simply because I, and my crew, would have just finished working for the past 12 weeks putting the things together.)*

Christmas Candles

Of all our Christmas sale items, the candles look the most Christmassy. We pour multiple styles of tree ornaments as well as tapers and standing candles. We actually used to hand paint some of the candles but that was tedious work – very tedious. The volunteer pool quickly dried up for that kind of work. Now all the candles are unpainted – but we will give you instructions on how to paint them.

Tis the season

For most of us, Christmas is a solemn, religious season. In my writings here, as I discussed such things as working on Christmas Day and selling honey products intended to be someone's Christmas gifts, I don't mean to belittle the main theme of Christmas but only to discuss the contribution that beekeeping makes to this special occasion.

After the Christmas and New Year season pass, it will be hard Winter, but spring is not too far away. The quietness of Winter is a great time to prepare for the demands of Spring. I hope yours is a happy and rewarding holiday season. **BC**

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

20% ←

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References can be supplied.
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... And 40 Shades of Green



The island of Ireland is known throughout the world as 'The Isle of Saints and Scholars', renowned for the 'Cead milte failte' (The Hundred Thousand Welcomes) that is extended to our visitors. Above all Ireland is known for its forty shades of green. Ireland is perched on a continental shelf – to the east, our nearest neighbour is Great Britain, with the larger landmass of Europe yet further east. To the west we have the huge expanse of the Atlantic Ocean and America many miles away. Our temperate climate is due to the Gulf Stream that bathes our shores. The abundance of rain and the temperate conditions enable the most wonderful variety of flora to grow in Ireland. There is no green to compare with the green of Ireland. It is not for nothing that we are known as the Emerald Isle. A surprising fact is that 65 percent of the total landmass of Ireland is grassland, and if we include other

lic amenities, this figure raises to 85 percent.

On our exposed rocky shores Sea Pink contrasts beautifully with the orange of the Lichen found on the rocks and usually accompanied with a carpet of Yellow Bird's Trefoil. Sea Aster is common both on salt marshes and on rock shores. Marram Grass dominates the sand dunes. The Wild Pansy thrives on the dry sunny banks of sand dunes, and Thyme adds fragrance to the sand dune flora. On the shingly shores, Seakale (*Crambe maritima*) is one of our rarest native plants. The bright blue to pink flowers of the Oyster Plant (*Mertensia maritima*) and the Sea Pea (*Lathyrus japonicus* subspecies *maritimus*) are also rare. Rushes, reeds and the beautiful yellow Flag Iris often grow in the damp areas trapped behind the sand dunes.

David Shirley

Ireland has some of the last undisturbed bog lands in Europe. There are two main types of bog: the lowland 'raised' bogs found in the centre of Ireland and the blanket bogs of the west coast. The 'raised' bogs can be a dangerous place with pools of stagnant water over 2m deep covered with floating islands of Sphagnum mosses. The Sphagnum can be deceptive and tempting to walk on. Nearer the edges of these pools yellow Water Lily and Bog Bean (*Menyanthes trifoliata*) can be found. The Cranberry grows on large areas of the drier Sphagnum Moss. At the drier margins of the lakes, the fenland plants can be found. Early in the season, the fen colours are blue and yellow with the bright blue of Brooklime (*Veronica beccabunga*) and the intense yellow of the Marsh Marigold (*Caltha palustris*). The taller plants of meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), the spectacular plum-coloured Marsh Cinquefoil (*Potentilla palustris*) and the Water Mint (*Mentha aquatica*) flower towards the middle of summer. Added to this is the pinkish colour of the Marsh Orchards, Ragged Robin (*Lychnis flos-cuculi*) and Lady's Smock (*Cardamine pratensis*) to complete the most spectacular patchwork of colour.

Common grasses in lowland areas include the Cock's Foot, Cat's Tail, Meadow Foxtail, False Oat Grass and Yorkshire Fog - to mention but a few! The names themselves paint a picture of grasses. We have a tendency to downgrade their beauty but although less showy than other flowers they are in great demand by flower arrangers. A closer look at the grasslands will reveal such treasures as wild orchards e.g. the Bee Orchid, Dense-Flowered Orchid, Twayblade and the Frog Orchid. Other flower species include Buttercups, Clovers, Cowslips, Dandelions, Harebells, Meadow Sweet, and Willow Herb.

Arriving in Ireland by plane, one is immediately struck by the patchwork of greens and yellows created by the hedges and stonewalls. These mark the boundaries of fields and farms. There has not been such widespread destruction of hedges here as in other countries. As a result we are lucky enough to have

retained a huge variety of flora in the hedges. Driving along the narrow country lanes you cannot help but notice at different times of the year the yellowish-green flowers of the Alexanders, the trumpeting purple Foxgloves, the white Cow Parsley and the banks of pale yellow Primroses. Nowadays, you can also see the orange Mombretia. On the stonewalls, the white and red Valerian burst out in profusion. The Trailing Ivy-Leaved Toadflax, and the Fairy Foxgloves crown the tops of the walls.

In Spring the whole countryside



is lit up by the white Hawthorn blossom, which also produces masses of red berries for the birds in Winter. The thorny Blackberry, Honeysuckle, Ivy and wind Roses climb through the hedges to make an impenetrable screen. In the southwest the exotic flowers of the Fuchsia hedges tumble down. These contrast wonderfully with the brilliant yellow of the gorse. The catkins of the Willow, also found in hedgerows and riverbanks, produce the first pollen for the bees. As well as the Hawthorn we can find the Blackthorn, the Hazel, the Birch, the Rowan, the Holly, the Juniper, the Wild Cherry and the Crab Apple. All of these small trees have their own importance in Irish tradition and folklore. Carry a Blackthorn or Hazel walking stick at night and evil fairies are kept at bay. Hang branches of Rowan in the barn and the cow is safeguarded. Hung in the house, they protect against fire.

Irish woodlands are not very widespread. However, there was a time when a squirrel could have travelled through trees from

Killarney to Cork. Times have changed, but we still have areas of woodland containing trees such as the Oak, Ash, Beech, Irish Yew and Scots Pine. The Arbutus or Strawberry Tree, which is only found in Killarney, Co. Kerry is one of Ireland's rarest tree. Elms in Ireland, as in other countries, are virtually extinct due to Dutch Elm Disease. On the woodland floor, especially in ancient woodlands, we can come across incredible carpets of Bluebells. All at the right moment, Snowdrops, Celandines, Wood Anemones, Wood Sorrel will appear, and at almost all times of the year, ferns abound.

The most famous and largest limestone area in the whole of Europe is situated in the Burren, Co. Clare. This covers 250 sq kilometres of 'karst' landscape, limestone hills and shoreline. This particular formation was originally created by ice. The karst landscape develops because rainwater forms cracks in the limestone. At first glance, the landscape appears hostile and barren. However, between the cracks a microclimate has evolved where a great range of plants grow. These cover a spectrum, which include coastal, alpine, and arctic plants and even miniature trees.

The best time to see these plants is Spring. You must look closely to see the little plants hiding in the cracks and the dips and hollows, you will find the Mountain Avens, the Spring Sandwort, the Irish Saxifrage, the Burnet Rose and, of course, the exotic little orchids as, for example, The Early-Purple Orchid, the Fly Orchid and O'Kelly's Spotted Orchid. There are also many little ferns which have now spread to many of the stonewalls around Ireland. The limestone seems completely tree-less, but look into the cracks and you will discover bonsaied Holly, Ash, Hawthorn, Blackthorn and others, with their heads sheltered just below the surface.

Further reading concerning all of the above can be found in:

- Flora Hibernica by Jonathan Plicher and Valerie Hall
- Irish Trees - Myths Legends and Folklore by Niall Mac Coitir
- Plants and Beekeeping by F.N. Howes. **BC**

Honey Plants

Conn e Krochmal



More Spring Bulbs

This continues the Spring blooming bulbs that provide pollen and/or nectar for bees we started last month.

Daffodils, jonquils (*Narcissus spp.*)

These plants are valuable pollen sources. Depending on the variety and location, they bloom from late January through May.

Daffodils do well in a wide range of soils, but they prefer a slightly acidic to neutral pH. Excellent for naturalizing, they're hardy in zones 4 through 9.

Their height ranges from ½ to one foot. Some kinds may produce more than one flower per stem. These consist of a cup surrounded by a corolla with six segments. Although yellow is the most common color, daffodils may also be orange, pink, white, or multi-colored.

Along with countless hybrids, there are around 60 species of daffodils. They're classified into eight groups of which the ones discussed below are the best for bees.

Cyclamineus narcissus have small, drooping, solitary blooms with petals that curl backwards. Deep yellow, these can be two inches wide.

Jonquils are about a foot tall. Each flower stalk can produce two to six fragrant, yellow blooms. Their small cups have wavy edges.

Large-cupped narcissus feature only one blossom per stem. The flowers are up to 4½ inches wide.

Poet's or pheasant's eye narcissus are noted for their very fragrant white blooms. Up to three inches wide, these are solitary. The cups have frilled, reddish margins. Unlike other daffodils, these are suited to moist soils.

Small-cupped daffodils have one flower on each stalk. Among the earliest to bloom, their flower color can vary.

Trumpet narcissus blossoms feature long, slightly fringed cups. The solitary flowers are especially large – four inches wide.

Bluebells (*Hyacinthoides spp.*)

Bluebells yield pollen from the end of March through June. Bees may sometimes collect nectar near the base of the blossoms.

These bulbs prefer moist, slightly acidic soils in partial to full shade. Ideal for planting under deciduous trees and shrubs, bluebells are vigorous plants. Under good growing conditions, they can spread and naturalize. They thrive in zones 4 through 8.

Bluebells have linear leaves over a foot in length. About one to 1½ feet in height, these freely blooming plants produce spikes of dainty, nodding, bell-shaped blooms about an inch wide. Their petals and sepals are fused together. Opening on 1½-foot tall flower stalks, the clusters have a dozen or so blooms.

Among the species recommended for bees are these two.

English bluebells (*Hyacinthoides non-scriptus*) Though English bluebells are typically blue, there are varieties with white, violet, and violet-pink blooms.

Spanish bluebells, wood hyacinth (*Hyacinthoides hispanicus*) Considered to be coarser than English bluebells, Spanish bluebells are larger with more showy flowers. Blossoms are mostly blue, but they may also be rose-purple, pink, or white.

Grape-hyacinth (*Muscari spp.*)

Grape-hyacinths provide nectar and pollen from March through May.

These reliable bulbs are very easy to grow. Once they're established, grape-hyacinths often naturalize. The hardy ones are suited for zones 5 through 8.

Grape-hyacinths are about ½ to one foot tall. Few in numbers, the leaves emerge in late Autumn, and remain until the plants bloom the following Spring. The very dense flower heads contain 15 to 40 urn or cone-shaped blooms. These open at the top of the strong, windproof, 1½-foot tall flower stalks.

Of the 30 species or so, the best ones for bees are these three.

Armenian grape-hyacinth (*Muscari armeniacum*) This has fragrant, pale blue flowers. Only ¼ inch long, their edges are white.

Common grape-hyacinth (*Muscari botryoides*) is around six inches in height. True to their name, the clusters of blossoms are grape-like. Though they're usually blue, white-flowering ones are available.

Continued on Next Page
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Duo of Orange Tulips.

Feather-hyacinth, tassel-hyacinth (*Muscari comosus*) has scented, light blue or purple flowers. With the lower ones hanging like tassels, they have an unkempt look.

Hyacinth (*Hyacinthus orientalis*)

These sweetly scented flowers produce nectar and pollen in April and May.

Hyacinths grow well in partial shade and full sun. Plant them in a protected position as heavy winds can damage the large, top-heavy blooms. When growing conditions are too wet, these bulbs are espe-

Daffodils and Scilla



cially prone to rot and fungal problems. Hyacinths aren't long-lived, so they'll need replacing every four years or so. They're hardy to zones 4 or 5 if mulched. Because hyacinths prefer cool climates, their southern limit is zone 7

When handling hyacinth bulbs, I wear rubber gloves. They can irritate the skin.

Hyacinths are about six to nine inches tall. Their foliage can be a foot in length. With petals that curve outwards, the blossoms open in massive clusters of 40 or so. Some varieties have double blooms. Hyacinths are available in a broad range of colors.

Peonies (*Paeonia spp.*)

Peonies are excellent pollen plants with the single-flowered ones containing abundant pollen in each blossom. These also yield nectar. They bloom in May and June.

Peonies are dependable, hardy plants. These can live for 50 years or more. Adapted to most well-drained soils, peonies prefer slightly acidic conditions. They're suitable for full sun and partial shade with the latter prolonging the blooming period in southern states. In windy areas, the tall flower stalks benefit from staking. This is best done before the buds open.

Most peonies are hardy to zone 5, though some will survive in zone 3. Exposure to cold temperatures below 40 degrees Fahrenheit is needed to break dormancy, so their southern limit is zone 8.

Peonies are classified into two major groups – herbaceous and tree. Because the latter ones are so expensive, they aren't commonly grown. Typically, herbaceous peonies are three to four feet in height with an equal spread.

When looking at a peony in bloom, it's easy to see why these plants are so popular. Free flowering, they have an abundance of huge, showy blossoms. Some are fragrant. They come in a range of colors, including white, pink, red, purple, and yellow. Ones with single and semi-double blooms are the best for bees. The Japanese, anemone, and double-flowered ones aren't recommended.

Common peony (*Paeonia officinalis*) is generally the one we see in gardens. Reaching three feet in height, it blooms in May and June. The blossoms are four inches across. Because some hybrids of the common peony produce double blooms, read the flower descriptions before buying.

Siberian squill (*Scilla siberica*)

Providing lots of high quality pollen as well as nectar, these are great bee plants. The pollen is bluish-gray. Usually, Siberian squills bloom from late February through April.

This is the most popular species of squill. Easy to grow, the plants are especially tough. Siberian squill is adapted to full sun and partial shade. Plant them under trees and shrubs, and along the margins of woodlands. Under ideal growing conditions, the bulbs may self-sow and spread, making them a good choice for naturalizing. They do well in zones 2 through 9.

Less than six inches in height, Siberian squill has slightly cupped foliage. It often appears before the blossoms. The small, nodding, wheel-shaped blooms are one inch wide. Their sepals and petals are fused together. Opening at the top of the leafless, reddish flower stalks, blossoms are in bunches of three or so. Each bulb can have multiple stalks. Though the flowers are typically gentian blue, there are white-flowering varieties.

Spring snowflake, St. Agnes' flower (*Leucojum vernalis*)

Spring snowflakes bring nectar and pollen from February through April.

Preferring moist growing conditions, these sturdy plants are among the few bulb species that tolerate wet soils. Spring snowflakes need watering during dry weather. Partial shade is best. zones 3 through 9.

Less than a foot in height, they have wavy foliage that emerges with the scented flowers. The flower scapes are one to six inches in height.



Spring scene with
Daffodils

These contain one to several pendant, white blooms. Resembling one-inch long lampshades, the blossoms often have green or yellow spots. They're similar to snowdrops (*Galanthus spp.*), but these are more showy and larger.

Giant or Summer snowflake (*Leucojum aestivum*) is a related species. Later to bloom, its flowers open in late April and May. Giant snowflake is slightly taller – up to two feet in height. Its ¾-inch long blossoms appear in clusters of five or so. This species will tolerate more sun than Spring snowflakes.

Star-of-Bethlehem (*Ornithogalum spp.*)

These bee plants provide ample supplies of nectar and pollen. Usually, they bloom in May and June.

There are over 100 species. The hardy ones are recommended for zones 5 through 8. Resembling flowering onions, star-of-Bethlehem features undulating foliage with silver lines. The flowers are nodding and star-like. Composed of six petals, they're one to three inches wide. These may be white, yellow, or orange-red. A single flower spike may have 12 to 20 blooms. With leafy bracts, the flower stalks range from one to three feet in height.

For bees, the best hardy species are these two.

Nodding star-of-Bethlehem (*Ornithogalum nutans*) is 1½ feet tall. It will grow in partial shade.

Star-of-Bethlehem (*Ornithogalum umbellatum*) has naturalized in the Northeast southward to Mississippi. This drought tolerant plant thrives in full sun and partial shade. From ½ to one foot tall, its linear leaves are a foot in length. This plant is considered poisonous.

Tulips (*Tulipa spp.*)

Tulips yield an abundance of pollen. With early, mid-season, and late blooming varieties, the bloom time extends from March through May. There are over one hundred species and several thousand varieties.

Tulips do best in an alkaline soil. For best results, choose a well-drained spot where the soil dries out over the summer.

Most tulips are recommended for zones 3 through 7. In zones 8 and 9, the bulbs need pre-chilling for six to eight weeks in a refrigerator before planting outdoors. Pre-cooled ones are sometimes available.

Depending on the variety, the height can range from ½ to three feet. They have broad, grayish, strap-shaped foliage. While some tulips may have a solitary bloom, the multi-flowered ones produce two to five. Tulip blossoms may be bell, saucer, goblet, or cup-shaped. With the exception

of true black, these come in most every color. Their petals and sepals are basically identical.

Although most tulips quit blooming and disappear after a couple years, a few are true perennials. Among these are the Kaufmannianas – considered the best of the species tulips. Certain varieties of Darwins also bloom year after year. These include 'American Dream,' 'Daydream,' 'Golden Oxford,' 'Maria's Dream,' 'Pink Impression,' and 'Red Impression.' The Dutch Gardens and Van Bourgondien catalogs list these perennial types.

In addition to the ones mentioned above, the following tulips are excellent bee plants. The other Darwins are a good choice. Usually blooming in mid-April, Darwins are the most commonly grown tulip. They can be 2½ feet in height. Up to four inches wide, the flowers are cup-shaped. These open on tall stems. Darwins come in a wide array of colors, including purplish-black.

Single early tulips are nine to 16 inches tall. Among the earliest to bloom, these make their appearance in early April.

Foster tulips reach 1½ feet in height. The large, red flowers with contrasting dark centers open in mid-April.

Triumph tulips are vigorous, robust plants with strong flower stalks. They are available in every color except yellow. These start blooming in mid-April.

From the cheerful crocus to the majestic tulips, there are many suitable Spring-flowering bulbs for bees. **BC**

Connie Krochmal is an award winning garden writer and a beekeeper.

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2005 – The New Year in Beekeeping

Where will you need to make some changes?



James E Tew

Too much reflection

I don't know, maybe this time of the year I reflect too much. But if you have plans for getting something done in 2004, you'd better be getting on with it. It seems that just last year we were struggling with fear of the new millennium – nope not last year – that was now *five years ago*. Time flies, and now, this year is essentially history.

Lots and lots of change

There has been an incredible amount of change in beekeeping recently, but many things have stayed exactly the same. How can that be?

About a dozen years ago when I logged onto the World Wide Web I found about 10-15 pages pertaining to beekeeping. It was like walking into an empty gymnasium. Lots of room for growth, but at that time only a loud, empty echo. There's been a lot of change, and a lot of growth there.

Now a simple Google search lists over 213,000 pages pertaining to just beekeeping. If I spent about three minutes per page just having a quick look I could be finished in about 10,650 hours or about 444 days – if I read 24-hours per day. Google gave me this much beekeeping information in about three tenths of one second. And right now my old-fashioned book shelf is right behind me. What extreme forms of information delivery – the web compared to these printed books. I have no connection to book publishing, but if I did I'd be wondering how long before all books are virtual. Maybe hard copies of bee books will be around for years to come. While I read current daily news on the web, I still peruse my hard copy morning newspaper. My point? More and more, the web has become your information source, and it appears that it will continue to grow in importance and diversity. Right now 75 percent of you reading this have access to and use the web.

Where will you have to change? Improve your web-based searching skills so you can perform “more advanced searches.” For instance, if you want information on *8-frame equipment*, just typing in *beekeeping equipment* on the web will probably keep you reading for about two months. Already gone are the days when you could do a quick web search and within a few hours

read all there was on the subject.

Here's a real-life example. Yesterday I received this email message,

“Hello:

I am wondering if you can tell me what voltage bees can apply with their stinger? Any idea what the pH of bee venom or bee saliva is? This is related to a project I am working on. Thanks for your assistance.”

As is typical with email messages I have no information about who this individual is, what the project is, or where he is from. It took the individual about 30 seconds to write the request but will take me about an hour to procure a response. What will I do? Search the web. The very same web that he could have searched. This individual is not doing anything wrong in writing me for information, but my challenge is that so many people want information and they want it at 186,000 miles per second (the speed of light). I constantly struggle to keep up.

More about email.

This past month, I wrote only one hard copy letter with the envelope and the address – you remember surface mail? One letter. Just one. Twenty years ago, letters and written correspondence were the primary way to economically communicate. I suspect that about 96% of my mail now comes to me via email format. In my defense I am not lazy nor do I particularly mind answering messages, but I am just plain buried in it. Remember how much time it would take to read all the hits that Google provides in a simple search on beekeeping? Well, email has nearly come to that point. I could spend all day, every day, just reading my email if I actually read all the email I get. But, I am not special, nearly all of us are in the same situation.

¹ To the best of my knowledge, bee stings don't administer any electrical voltage when stinging. The pH of honey bee venom is 5.0-5.5 (acidic). I could not find any reference to the pH of bee saliva.

Continued on Next Page
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Where will you have to change? You will need to change your attitude toward email, since it no longer carries the same strength as the old surface mail letter. We all get so much junk mail that simply blasting an impromptu email message out and then waiting (and waiting) for a response will probably work less and less. It scares me to death when I find an invitation to a bee group meeting that has been unintentionally buried by a filter in my "junk basket." After a week, why didn't they write me again? A formal email message needs to be significant enough to be resent after a proper period of time, and it absolutely needs an appropriate subject line. But it's still not like a special delivery letter. Even if you harass the message receiver by sending the message every few days, that will probably not work in your favor either. Email messages are easily lost in the backlog of filters and lost messages. If it is a message that's important to you, graciously resend it.

Within the University community

For more than half of my university student career I coveted a multitude of state extension specialists' jobs around the country. I knew what I wanted to do once I was done with school. I wanted to stay informed, write publications, develop visuals, give presentations and perform some practical research – man, what a great academic bee job I was going to get! But leave it to me to choose a job description that would dramatically morph into to a new job description. That's not unique to beekeeping though. My wife's experience in office management began by teaching typing, shorthand, and taking dictation. Now she does none of that – absolutely none. She teaches computer use and Cisco™ router technology. Everything changes.

Where will you have to change? Change what you expect from university and state regulatory bee people. Those of us who remain on the job are being increasingly pressured to generate more income and to publish more research materials. Conducting multiple in-state meetings, participating in numerous out-of-state meetings or writing a plethora of fact sheets no longer excites university administrators. "Cost Recovery" is all the rage. All commodity groups, including beekeeping, will be increasingly expected to pay the true cost of running a university program or state program.

And then there's the bees

Many years ago I and others boldly said that the arrival of Africanized honey bees into the U.S. was the biggest event to ever happen to our beekeeping industry. At the time it was, but then the "Perfect Storm" of pestilence – *Varroa* mites – hit our industry with full force. There have been volumes written and no real review is required here, but you will need to continue to make changes when dealing with your mite population, because your mite population will continue to change.

Where will you have to change? In the way, you attempt to control *Varroa* in your colonies, that's where. For a decade or so we've used chemical controls in the

form of impregnated strips. While that procedure is still working for many of us we all need to learn to accept the presence of low levels of *Varroa* in our colonies on a permanent basis. You're also going to be doing more and more sampling wo you aren't using chemicals when mite population doesn't call for it. Hygienic and other resistant and tolerant queens will certainly help, but they will not be the end-all answer. The real change will be treat when needed, not by the calendar.

Where we get our bees?

Yep, all these years I've recommended buying packages as replacements for colonies that died, for whatever reason. Plus, got a weak colony in the Fall? Combine it with another and next Spring buy a new queen and make a split from the overwintered unit. We can still get those queens and packages but the supply is somewhat spotty, the selling price is considerably higher, and the shipping costs are approaching enormous. Though I haven't conducted any surveys, it appears to me that as people retire from the package and queen business they are not being replaced. And now, that market has gotten even larger – the whole of Canada larger.

Where will you have to change? You may want to work harder to keep the bees and queens you already have rather than letting them die during the Winter. It is no longer cheaper to buy replacement bees. Many clubs have arranged to buy packages in quantity and someone hauls them back, for a price of course. Maybe that will have to be done more. Of this I am sure....if our industry had a large sudden influx of new beekeepers, our queen and package producers would be sorely challenged to meet the demand. We want our industry to grow but I think we need to be careful what we wish for.

Where do we keep the hives we have?

For the most part our industry has been agricultural in background. Beekeepers tended to live in rural areas. Not now. Beekeepers live in subdivisions and near their neighbors. As a young kid I can remember our neighbor keeping a few chickens on a residential lot. If fact I raised chickens behind my Dad's garage – right in the middle of town. No farm animals there now. No milk cows, chickens or goats. Too stinky and too noisy.

Where will you have to change? Don't panic, but I sense that at some point, keeping bees very near your neighbors may fade to a memory, much like keeping chickens and goats on residential lots. Chickens and goats just made noise and emitted unpleasant odors. Bees, on the other hand, administer life-threatening stings (or so the public increasingly believes.) I presently have hives in my backyard and enjoy having them there, but if my neighbors were truly frightened and officially complained, I would move them out of town without contest. In a way, my beehives would be returning to their roots – a rural environment. I wouldn't

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have to worry about stinging incidents or about swarms pitching on the neighbors grape arbor – but they would not be convenient to me. I don't know how fast this change will occur, but I am sure that urban/suburban people are not as tolerant of bees as they once were. And don't even try that pollination lecture on them.

Change, though frequently undesirable, is natural.

Think about it. What if beekeeping had made absolutely no change since – say – 1920. We would have no stainless steel. We would still be using lead solder in the metal equipment joints. We would still be folding basswood sections for comb honey production. We would be wearing crude protective gear. No plastic containers or equipment.

At the outset changes appear threatening, but once they are established our industry frequently is improved for having been forced to evolve. Be adaptable. Be creative. Get on with things. Go keep bees in the modern way. **BC**

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

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QUEENS

Alive

Larry Connor

There are some good reasons to keep old, inferior queens.

Over the past 18 months or so, I have written about queens and drones and many key aspects of bee biology and colony management. In this issue I may repeat some points I have made before, but do so openly and freely because a little repetition is well used on issues of queens and drones. As we spend a few moments reflecting on the things we did right this past season, we may also project ourselves into the new season and attempt to do a few things better next time.

WHEN SHOULD A QUEEN GO?

A key part of the training of a beekeeper is to understand when a queen has served her useful life in a hive and it is time to replace her. So before we discuss keeping queens alive, we need to discuss when to replace a queen. Any queen which is a poor performer should be dispatched immediately and not given a free pass to nucleus assignment. The same applies for those queens with some unfavorable genetic traits – temper, nervousness, disease or other behaviors. Failure to thrive is a sure death sentence for a queen. Carry out the deed quickly and efficiently. Feel free to hold a moment of silence after the queen is dead.

For those of you unwilling to take a perfectly healthy, laying queen and kill her, I offer this suggestion: use the queen in an observation hive for educational use, or move her into a nucleus colony and let her spend her last

days starting a new, but smaller hive. Then, if she shows signs of failure, requeen the colony with a purchased queen, a queen you have raised yourself (bravo!), or a queen cell you have found and the colony



could spare the frame of brood it is on and the attached bees. In other words, use the queen at a lower egg-laying rate, and a lower pheromonal expectation level. You will probably feel better about getting double duty out of a queen. Of course, if you have selected that queen as one of the top five or ten percent of all the queens in your beekeeping

operation, then you may use the smaller nucleus colony as a source of larvae during queen cell production. A general rule is to keep 10 to 20 percent of your colony count in nucleus colonies. A 200 colony operation should have 20-40 nucleus colonies, located in all apiaries, where the old queens serve as placeholders for new queens. Introducing a queen into a small colony is one of the safest queen introduction methods you may use.

Use the general rule of requeening a colony every two years. In southern states, consider requeening every year, for the queen is laying eggs almost all year long. Look for the original queen (not her supersedure daughter) and remove her, installing a new queen or a queen cell in her place. Ask yourself *how hard has this queen worked?*; have you pushed the colony and the queen by feeding heavily for brood rearing to make splits? Has the queen been stressed with chemical treatments and other mite treatments? Have you moved the colony for pollination, a nectar flow, or out of state for the winter? All these factors place stress on the queen and is reason to use the two-year or sooner rule as a criteria for replacement. Those queens which have been kept in small units and not pushed may be kept longer, especially if they perform above average for your operation.

What do you do with a supersedure queen? Is she the same as her mother? Of course not! Evaluate her performance and if she

passes your standards, put her on a two-year track of her own. Clip a wing so you know you are dealing the queen and not her daughter in future visits. Marking is nice for queen finding, but paint comes off; wings do not regrow.

WHEN TO KEEP A QUEEN

From the above section, you should now understand the importance of keeping a quality queen in your colony, especially if she is young, vigorous, and carries highly desirable genetic properties. There is probably just one good reason to keep an old, inferior queen; keep any queen of a genetic type that is valuable to you and your beekeeping operation. If the colony is diseased remove it immediately – you don't want those traits!

SPECIAL QUEENS: QUEENS OF VALUE

In October I spoke at a meeting where a beekeeper publicly confessed to purchasing a breeder queen for \$850. I suspect that price is not a record, and it included a donation to a beekeeper cause. But the price begs the question: How does a beekeeper handle a queen which costs more than many folks pay for rent or their mortgage? What are such queens of special value:

1. Breeder stock: queens of known genetic makeup, possessing desirable genes for disease/mite tolerance, vigor, pollen foraging, wintering ability, and much more. *Queens in closed population breeding programs fit here.*
2. Tested, proven breeders: These are queens whose *daughter* queens were tested for performance and are now used to produce larvae for queen cell production. Such a proven breeder queen is very important to any bee operation, often representing hundreds of hours of evaluation and testing, even if data were collected by comparing the size of the relative backaches obtained by removing supers of honey the daughter colonies produced.
3. Inbred lines: We do not have many *inbred-line* based breeding programs anymore, like the old Starline and Midnite bees,

which used four very distinct and highly inbred stocks that were crossed to create a hybrid worker bee. Some of these queens are very fragile physically because of the effects of inbreeding, and they produced small amounts of brood with many missed cells. Yet they are extremely important to making hybrids. They must be treated carefully, with emphasis on reducing robbing, boosting with frames of sealed and emerging worker brood, and feeding. Unusual inseminated queens, like queens inseminated with semen from a single drone, should be handled like inbred queens because they will produce only a limited number of viable worker eggs before becoming drone layers.

I considered colonies headed by an inbred queen to be queenless. It required a continuous supply of supplemental frames of sealed worker brood and checking for queen cells. These cells should be cut unless the queen is on her last legs and the daughter queen is needed to carry on the line.

4. Genetic mutations – A few of us like colonies with genetic mutations, such as cordovan drones (black marks are replaced by brown), eye mutations, wing mutations (not caused by mites or viruses) and more. Treat these queens like inbred lines.

VIGOROUS BUT VALUABLE

The above colonies benefit from simple beekeeping practices: being kept in isolation away from large honey production colonies, away from insecticides, and away from diseased colonies. They should be carefully fed sugar solution and pollen substitute as needed. They should not be fed in a way to promote robbing, since this is very stressful on queens and is believed



to stimulate supersedure cell production. If pollen supplement is fed, make sure the pollen is from chalkbrood free colonies, as pollen is an ideal medium to infest chalk brood into a colony.

STOCK STORAGE IN NUCLEUS COLONIES

These same rules should apply to vigorous colonies being kept for breeding purposes. Perhaps the one which is most beneficial is to inspect the colony every two weeks to look for supersedure cells, removing them when found. This may reflect declining queen vigor, or some other factor. Move the queen into a nucleus colony if supersedure cell production continues.

Use of nucleus colonies is ideal for stock maintenance. Provide a routine visit schedule, and clip wings of all queens to insure stock record identity. This is not an extensive labor effort, since you can inspect a nucleus colony quickly and determine if brood should be added to boost the bee population. I like to keep four frames of brood in a five frame nucleus colony so there is reduced risk of damaging the queen during inspection. Some beekeepers supply food by putting a nucleus box of honey *below* the brood area, thus providing food in a

Continued on Next Page

safe manner.

Nucleus colonies should always have their entrances reduced to about one to two inches, and a piece of queen excluder placed at the entrance if the queen is really important. A robbing screen may be needed in many areas, since strong colonies find nucleus colonies and set up robbing behavior – remember to consider this colony queenless if the queen is special or inbred.

BANKING QUEENS

Queen banks are queenless colonies that hold a number of queens in an environment that supports the feeding and care of caged queens. Banks are used by many commercial queen producers, and very effectively. In my world a queen bank is run much like a cell builder. A young, vigorous queen is kept in a ten frame hive body. Every 10 days or so the open brood she has produced is moved to a second box placed above a queen excluder. If the queen is not seen, the brood should be shaken or gently brushed to remove bees to eliminate the chance of moving the queen into the queen holding area. Emerged-from frames of brood comb may be moved to the bottom hive body. If the colony has plugged the cells, the combs should be extracted and empty comb placed into the brood area where the laying queen is present.

Alternating between frames of open worker brood are frames holding queens in cages. These cages may be made of hardware cloth, wire screen and wood, or plastic. I have not used the plastic, but would like to recommend trying it because wire cages have been shown to damage queen foot pads, and this may stimulate early queen supersedure.

There may be 30-60 queens stored in one queen holding frame, and up to two frames per queen holder. That is a lot of queens. The queens should be the same age and genetic makeup. Given a choice, worker bees will select queens with similar genetics and care for them better than 'foreign' queens of unrelated stock. It is probably important not mix young virgin queens with old mated queens, although I will not predict a response by the bees.

Queen banks **MUST** be fed constantly with a feeder, preferably a division board feeder to reduce robbing, but if a top feeder is filled more often, then use it. You should attempt to duplicate the conditions found during swarming season, the peak of the season, where colonies have lots of incoming food and young bees. Inside a queen holding colony where the bees are well fed, you may find that the queens are laying eggs in their cages! I see that as a very good sign.

The equipment must be bee tight so the queen cannot get up to the area where queens are being banked. Once she starts laying, queen death is rapid.

What happens to queen pheromone production in a queen bank? I have wondered this since I started working with queen banks in 1976. Lately, some preliminary information suggests that these queens shut down their individual pheromone production. If so this provides a valuable key to problems beekeepers sometimes have introducing queens taken from queen banks: they are often not accepted or quickly superseded if they make it through the introduction process.

For that reason I feel that banked queens should always be introduced into small units, like splits or nucleus colonies, held in their cage or a special introduction cage for at least a week before they are released, and fed before, during and after the holding and release process. This should allow the queen to return to normal pheromone production, plus allow here two ovaries to swell with developing eggs. For those who do not to wait a week to introduce a queen, ask yourself which takes more time – a week for delayed introduction or attempting to introduce a queen after the first one has failed.

After the banked queen is out and laying, revisit the colony every 14 days and check for supersedure cells. Cut these cells out and see if the target queen continues to build the colony normally. Usually the egg-laying is just fine, but the pheromonal response is lacking.

Always ask if you are being shipped previously banked queens.

HOLDING A FEW QUEENS A FEW DAYS

A recent survey at a state bee meeting revealed that the top of the home refrigerator is the most common storage place for queens shipped to beekeepers. This has something to do with curious dogs and children. While this was an unscientific survey, it reflects a stupid beekeeper trick that doesn't always work.

If you order queens in quantity, get the bees shipped with the queen alone in the cage and worker bees in a bank around her. If you have a few queens shipped to you I suggest the following:

1. Remove all worker bees from the shipping cages.
2. Place the queens screen up in a small box so all will be exposed to bees we are about to add.
3. Add a small amount of queen candy (honey and confectionary sugar) in a corner of the cage, and
4. a water source, like a damp sponge or a small water bottle in a hole in the top of the box.

Into this box shake the nurse bees off a frame of brood, adjusting the number of bees to the number of queens you are holding. Use about 100 nurse bees per queen, but don't bother counting!

Keep in a cool, dark place. This does not include the top of most refrigerators. Keep away from dogs, children, insecticides and the hazards.

The advantage of this box of queens is that you can carry it to the yard with you, and simply bounce the box once to shake the nurse bees onto the bottom. Keep out of sunlight as you work.

If you keep queens more than three or four days, replace the worker bees by shaking the old bees out in front of a colony and adding new worker bees. If the bees start to smell a little funky, like old sneakers, it is time to change the workers.

Have fun! Happy Holidays. **BC**

Larry Connor is owner of Wicwas Press, New Haven, CT where he edits and publishes books on bees and beekeeping – LJConnor@aol.com or www.wicwas.com

MOVE SAFE!

Roy Hendrickson

Every beekeeper will at one time or another find it necessary to move some of his or her bees. In light of the finding from a recent Texas lawsuit (*Bee Culture*, July 2004) how well that move is handled could have a major impact on your beekeeping future. Using friends, neighbors, or any of the non-beekeeping public to assist could open up a legal Pandora's Box.

The following is a simple one person procedure that will allow you to move a few colonies without undue strain to your physical being, and no risk to others. The only requirement is that you're able to lift the heaviest box in the colony configuration. As with any colony manipulation timing is important. Moving bees during a major honey flow, or extremely hot weather complicates the move. If possible wait for a cool spell and a cessation of the honey flow. If time permits remove the excess honey and add an empty super to alleviate entrance clustering, or hanging out. Once colony conditions are suitable the move can proceed.

Early morning moves generally work best. Temperatures are cooler, most of the foragers are still home, and darkness will not factor in. If the colony or colonies to be moved are small, a single hive body or lightweight single and a half, the process is easy. Simply screen the entrance then band, strap, or staple the hive parts together, lift the unit on to the truck and it's off to the new location.

However, unplanned or emergency moves seldom involve small colonies. Murphy's Law states that these colonies will be large, with populations to match, and supers, they will always be supered. None the less, the plan remains the same as will small colonies. Except, instead of lifting the large colony onto the truck as a one piece unit you

break it down into small units. With a well lit smoker lightly smoke the entrance, remove the outer cover and smoke the top. Gently break the colony apart smoking each opening lightly. Speed is not of the essence. The judicious use of smoke, and steady, gentle movements are important, keep the colony calm. If a queen excluder is in use take care to keep the supers and broodnest boxes separate. Once you've reached the bottom broodnest box pick it up alone with the bottom board and set it on the truck. Again, using light smoke reassemble the colony on the truck bed. Screen the entrance and fasten the colony together with ratchet straps or banding material and off you go. At the new location the whole process is reversed. The colony is taken off the truck in pieces and reassembled on the new stand.

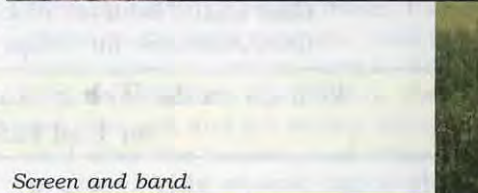
Loose bees – no matter how efficient you are there will always be a few foragers left behind at the old location. If other colonies are present these foragers will drift into one of those colonies. If the old location is being abandoned leave a nuc or single behind to pick up the strays. This colony can then be moved out the following evening once everybody is home. That was the case in the move pictured. This move involved five colonies and was completed on a cool June morning in slightly more than a hour.

With practice and some adaptation this moving procedure can be used anywhere. It's a simple, safe method of moving bees and eliminates the need to put non beekeepers in harms way. **BC**

Roy Hendrickson is a sideline beekeeper and occasional contributor from Chardon, Ohio.



Start small.



Screen and band.



Add layers.



Away you go.



U.S. To Import Down Under Bees, Maybe.

Kim Flottum

After 26 years of debate, early last month the USDA Animal Plant and Health Inspection Service, (APHIS), declared it was legal to import honey bee queens and packages from New Zealand, Australia and Canada in to the U.S.

Previously honey bee imports from any country other than Canada have been allowed only if the bees were imported by the USDA for scientific purposes (think Russian bees, here). Drone semen was allowed from Australia, Bermuda, France, UK, or Sweden, after meeting a host of qualifications, however.

To implement this new ruling, APHIS has worked with Australian and New Zealand officials to prepare country-specific pest risk assessments (PRAs) and to format the new regulations. These PRAs did not reveal any pathogens, parasites or disease strains in either country that were not already present in the continental U.S., nor were exotic bee species (Asian or *Capensis* bee strains) present.

Both countries have been sending queens and packages to Canada for several years, as has the U.S. (only from Hawaii). In 2001 (the last year Ag. Canada data is available), Canada imported \$2,073,557.00 worth of queens alone. However, since 1996, U.S. exports have risen from \$545,000 to \$1,805,400, while Australian and New Zealand exports, combined, have fallen from \$509,400 to \$107,000. A good guess is that's just over 120,000 queens from the U.S. in 2001, while about 7,000 come from down under.

There are rules and regulations that these new suppliers have to meet, however. And these rules were designed to meet the standards and inspection protocols of the Office International des Epizooties (OIE). These are rigorous, internationally recognized standards practiced by most countries importing and exporting honey

bees.

These rules now, however, will also apply to importing bees from Canada, where previous regulations were far less stringent. APHIS supported this change as a reflection of the OIE standards. These require certification of honey bees, honey bee germ plasm and bumble bees, because APHIS has concerns over the range of countries that Canada imports bees from (in 2001 - Italy, China, Germany, UK, Denmark, Brazil, Japan, Australia, New Zealand and the U.S.).

Beeswax, slungum, royal jelly, as well as pollen also have new guidelines for importation, and even used equipment is tougher to get here from Canada now.

An interesting clarification came to light during the hearings. APHIS treats the entire continental U.S. as a single entity. Pests found *anywhere* are considered to be *everywhere*. Historically APHIS has chosen not to regulate the interstate movement of honey bees because the migratory nature of commercial beekeeping made it too difficult. States, however, have a somewhat different view.

An export certificate from New Zealand or Australia must show that bees being exported were produced in the exporting region and are the offspring of queens, drones or semen *also* produced in the exporting region. This demonstrates no opportunity for new maladies to be introduced.

This was not an economic decision. APHIS undertook this investigation, and created the rules and regulations to comply with international trade rules. Nevertheless, they feel that there will be minimal economic impact on any U.S. queen and package producer in the U.S., with the exception of a very minimal impact on Hawaii queen producers due to reduced early Spring queen sales. This remains to be

seen.

The restrictions on Australia, New Zealand and now even Canadian exporters are rigorous relative to inspections required, the timing of inspections, shipping containers, ports of entry and documentation.

Probably the most limiting restriction, however, has to do with the plane ride north. Because *Varroa* has been found in New Zealand, and small hive beetle has been found in Australia, bees cannot be transhipped in Hawaii. That is, taken off one plane and put on another plane, because Hawaii has neither of these pests. Overcoming this obstacle will be a challenge for sending packages, certainly, but both queen cages and packages can still be shipped directly to the U.S.

For now, few suspect that these new bees will add much to the quality of existing U.S. stock since they have not had two decades of exposure to mites. Moreover, when most needed in the U.S. - early Spring - what's available are down-under Fall bees - a biological backstep. One can assume these traits led to the 10-fold decrease in queens imported into Canada from these countries and the 30% increase in queens arriving from the U.S. These aren't necessarily bad bees, but it's all in the timing.

No doubt you will see ads for these bees soon, and, with any U.S. bees and queens going to Canada, there may truly be a shortage of available queens and bees this Spring.

If the obstacle of transhipping in Hawaii can be overcome, however, one advantage to this may be the fact that commodity bees could be shipped here when obtaining iffy Spring bees can be a problem. Then, customized U.S. produced queens could be added, giving pest and disease tolerance to the new colony. **BC**



? DO YOU KNOW ?

Social Structure

Carence Collison

Mississippi State University

Honey bees are social insects and basic management principles are directed at the colony level rather than being concerned with individual bees. The social structure of the colony is based on the principles of division of labor, kin recognition and specialized reproductive castes. Effective management requires the beekeeper to understand basic bee biology, behavior and the social organization of the colony. Honey bee colonies use a variety of strategies to integrate individual worker activities to meet colony requirements

efficiently. Maintaining a healthy environment, control of diseases, predators and parasites, and the collection and storage of food stores are critical to colony survival. When bees fail to accomplish these tasks, then beekeepers must intervene and provide assistance.

Please take a few minutes and answer the following questions to determine how familiar you are with these important topics.

Level I Beekeeping

1. Please indicate why worker honey bees are referred to as imperfect females. (1 point)
2. ___ All worker honey bees must make contact with the queen to respond to her presence. (True or False)
3. ___ Attendant worker bees found within a queen cage should be removed prior to introducing the new queen to a colony. (True or False)
4. All castes of honey bees molt about every ___ hours during the first four days of larval life.
A. 6
B. 24
C. 16
D. 10
E. 20
5. Describe what happens when a bee dies inside of the hive. (1 point)
6. Name two stimuli used by guard bees in recognizing robber bees. (2 points)
7. ___ A new nurse bee feeds older larvae greater than three days old when she begins her nursing activities then switches to younger larvae, as she ages. (True or False)
8. ___ Queen honey bees lack wax glands, brood food glands and pollen baskets. (True or False)
9. ___ A forager with a load of nectar significantly reduces the water content of her load while returning to the hive. (True or False)
10. ___ In a hopelessly queenless colony, laying workers emerge and are important in saving the colony. (True or False)
11. ___ Wax moth larvae prefer to tunnel through cells of honey rather than occupied brood cells. (True or False)
12. ___ Wax moth larvae will sometimes prevent adult worker honey bees from emerging from their brood cells. (True or False)

Advanced Beekeeping

13. ___ The amount of drone comb in a brood nest is governed by negative feedback from drone comb

already constructed. (True or False)

14. ___ Since the queen is able to distinguish between worker-size and drone-size cells she is directly involved in the decision process regulating the construction of drone comb. (True or False)
15. ___ High fructose corn syrups produced by acid hydrolysis produce bee food that is safer than those produced by enzyme hydrolysis. (True or False)
16. ___ As the levels of hydroxymethylfurfural (HMF) in sugar syrups being fed increase, so does bee mortality. (True or False)
17. ___ As chemical is removed from the surface of Apistan Strips™ by the bees, additional active ingredient migrates to the surface from within the strip. (True or False)
18. When *Apis mellifera capensis* is transported or migrates into a new area, it wrecks havoc with the indigenous honey bees colonies that are present. Please explain how this is accomplished. (2 points)
19. ___ When sampling thoracic tracheae of infested bees, it is possible to differentiate between live and dead tracheal mites. (True or False)
20. ___ Kashmir bee virus has been found in North America and can cause mortality in brood and adult honey bees. (True or False)
21. ___ Mitochondrial DNA found in Africanized honey bees in the United States is inherited from drone honey bees. (True or False)
22. ___ In heavy *Varroa* mite infestations, new worker honey bees may emerge with shortened abdomens, misshapen wings, and deformed legs and may weigh less than healthy bees. The misshapen wings are believed to be caused by deformed wing virus. (True or False)
23. Upon dissecting a spermatheca from a queen you find them to be clear, white or marbled in appearance. Please indicate which one is from a virgin queen and which one is from a well mated queen. (2 points)

ANSWERS ON NEXT PAGE

?Do You Know?

Answers

1. Worker honey bees are unable to mate
Worker honey bees lack a sperm-storage reservoir (spermatheca)
2. **False** Honey bee queens are often surrounded by a retinue of workers that are responsible for feeding her, grooming her and removing her wastes. In addition, these attendant worker bees lick pheromones from her body surface, that are distributed throughout the worker population. As a result not all worker bees must make contact with the queen to respond to her presence.
3. **True** There are many factors to consider when introducing a new queen to a colony using a queen shipping cage. The safest technique when using the mailing cage is to remove the attendant workers and remove the cork over the candy hole of the queen cage prior to inserting the cage between two brood combs. Removal of the attendant bees lessens the amount of the foreign odors associated with the queen and workers. Without attendants, it forces the colony to feed and care for the queen which expedites them becoming familiar with her pheromones.
4. B) 24
5. Bees that die inside of the hive are quickly removed and deposited outside of the hive.
6. Flight behavior of robber bees and body odor are different from the returning foragers.
7. **True** Workers within a day or so after emergence begin to feed larvae, particularly the larvae older than three days. At approximately six to 12 days of age they begin to feed young larvae less than three days old. During the third week the nursing activities become more varied and less related to larval age.
8. **True** Queen honey bees do not have pollen baskets on their hind legs, do not have brood food glands for secreting royal jelly or wax glands.
9. **False** In several instances, it has been shown that the honey bee does not appreciably change the concentration of nectar while gathering a load and carrying it back to the hive. No increase in sugar concentration occurs while the bee is en route to the hive with her load, as was suggested for many years.
10. **False** In a hopelessly queenless colony the development of laying workers is not a mechanism for saving the colony. The laying workers are only able to lay unfertilized eggs which result in undersized drones, when they develop in worker-sized cells. The fate of such a hopelessly queenless colony is eventual death, since only male offspring are produced. Some of genes of the colony may be passed on if a drone produced by the laying workers is successful in mating with a queen from another colony.
11. **False** Wax moth larvae prefer to tunnel through empty or occupied brood cells rather than through cells of honey.
12. **True** When wax moth larvae tunnel along the midrib of the comb beneath capped worker brood cells, they may incidentally tether the young bees to their cells with webbing that lines their tunnels. This prevents the bees from emerging from their cells. Such trapped bees usually die from exhaustion.
13. **True** Honey bees actively regulate the relative quantity of worker comb and drone comb. The amount of drone comb in a broodnest is governed by negative feedback from drone comb already constructed.
14. **False** The feedback mechanism that regulates the construction of drone comb in the honey bee colony depends on the workers having direct contact with the drone comb already present. Even though the queen can distinguish between worker- and drone-size cells, the feedback mechanism does not depend on the queen's contact with the drone comb. The comb itself, rather than the brood within it, is sufficient to provide the negative feedback, although the brood may also contribute to the effect.
15. **False** High fructose corn syrups are produced by two different methods: acid hydrolysis and enzyme hydrolysis. Acid hydrolyzed invert sugars cause significant increased bee mortality in comparison to the syrups produced by enzyme hydrolysis. This mortality is due to hydroxymethylfurfural (HMF) in the acid hydrolyzed syrups. HMF is a by-product of the acid hydrolysis process which splits the sucrose molecule into the simple sugars, fructose and glucose. In contrast, the enzyme hydrolysis process reshapes the molecule so the split does not result in the formation of HMF.
16. **True** Research has found that the concentration of hydroxymethylfurfural (HMF) in sugar syrups is a factor that influences bee mortality. Mortality results from gut ulceration. High fructose sugars are invert sugars that can be produced by either acid hydrolysis or enzyme hydrolysis. Those produced by acid hydrolysis can be deadly if fed to honey bees due to hydroxymethylfurfural.
17. **False** The active ingredient, fluralinate, in Apistan Strips[®] does not migrate to the surface of the strip as bees remove the surface chemical by coming in contact with it. The chemical is caught within the plastic matrix during manufacture and only that on the strip surface is available to the bees. This indicates that the strips are only useful as long as chemical remains on the surface.
18. The cape honey bee when moved into a new geographical area rapidly moves into the indigenous colonies and takes over. Numerous *Apis mellifera capensis* workers can lay viable worker eggs. The *capensis* invaded colonies soon become unproductive out of their native habitat.
19. **True** A rapid and simple differential staining technique has been developed that is useful in differentiating between live and dead tracheal mites. This

technique can be used to determine both tracheal mite infestation levels and mite mortality. Tracheae are removed from a adult bee and transferred to a drop of tetrazolium dye. Within a few seconds the live mites stain bright purple and the dead mites turn greenish yellow.

20. **True** Kashmir bee virus has been found in North America, Australia, New Zealand and parts of Europe. This virus is virulent when *Varroa* mite levels are high. *Varroa* mites can carry the virus both internally and externally. Virus transmission can be through multiple routes, not only mite to bee, but bee to mite and mite to mite through a honey bee intermediary. Unlike acute paralysis bee virus that affects only adults, Kashmir bee virus is reported to cause mortality in brood and adult honey bees.
21. **False** The mitochondrial DNA found in honey bees is inher-

ited only from the queen. Since it is possible to differentiate between Africanized honey bees and European honey bees by analyzing mitochondrial DNA, it is used to monitor the migration of Africanized honey bees. These analyses have shown that Africanized honey bees in the United States have originated from a very long maternal line that extends relatively unchanged back to the original introduction of African bees into Brazil in 1956.

22. **True** In heavy *Varroa* mite infestations, pupae may not develop into adult bees. Adults that do emerge may have shortened abdomens, misshapen wings, and deformed legs and may weigh less than healthy bees. The misshapen wings are believed to be caused by deformed wing virus. *Varroa destructor* may act as a vector of the virus, introducing it to the pupae during feeding.

23. Virgin queen's spermatheca is clear
Well mated queen has a marbled spermatheca in appearance

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 6 points, do not be discouraged. Keep reading and studying- you will do better in the future.

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.

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Christmas Is Coming – Soon!

Everyone has to eat, even in December.



Ann Harman

One day the radio announcer says there are 28 more shopping days until Christmas. Then, it seems, the next day there are only five more shopping days until Christmas. December is that sort of month, too quick, too busy. But everyone does have to eat. The trick is to make something that keeps people happy, makes family feel they are not being tossed a pizza every day, and makes guests feel at home. All the while you are writing Christmas cards to the people you dropped off the list but, surprise, here is a card from them; trying to make the tree look like it's standing straight (no wonder it was cheap – the trunk has a wicked curve in it); and wondering who walked off with the red ribbon.

At the beginning of the month, when you feel there really are plenty of days before Christmas, why not make some quick bread loaves and put them in the freezer. Here they can await the guests, keep the family happy when there really is no time to spare, and to give as gifts.

A banana bread recipe is especially handy when you discover some over-the-hill bananas.

Although the recipe calls for making two large loaves, you can use the small pans but you will have to reduce the baking time. Watch the baking carefully.

SOUR CREAM BANANA BREAD

2 eggs
1 cup sour cream
1 cup honey
1-1/2 cups very ripe bananas, mashed

2 tablespoons rum, orange juice or other fruit juice
1 cup chopped walnuts or pecans
3 cups unbleached white flour
1-1/2 teaspoons baking powder
1 teaspoon baking soda
1 teaspoon salt

In a mixing bowl beat the eggs until they are light. Add the sour cream and honey and beat again. Add the bananas and rum or juice and mix well. Stir in the nuts. Sift together the flour, baking soda, baking powder and salt. Combine with the egg mixture and stir gently until just mixed. Pour into two 8X4-inch greased loaf pans. Bake at 350° one to 1-1/4 hours. Banana bread doesn't really test done with a toothpick. Push down gently on the top with your finger; when it's no longer squishy and feels springy, it's probably done. If there is firm resistance, it's probably overdone. Leave in the pans for about 10 minutes before removing to cool on a wire rack.

The Garden Way Bread Book
Ellen Foscue Johnson

Cranberry sauce really does not take much time to make. You have probably been making the same recipe for years. How about a new taste? This next recipe is really wonderful and definitely a bit different. Please remember that the bag of cranberries you buy is no longer one pound so go ahead and buy two bags. Then measure out two cups.

STRAWBERRY-CRANBERRY SAUCE

2 cups (1 pound) fresh cranberries

1/2 cup mild flavored honey
1/4 cup water or fresh orange juice
1 package (10 ounces) frozen sliced strawberries in syrup

Wash and pick over cranberries. Place in wide bottom saucepan. Add honey and water. Cook over medium heat until cranberry skins pop. Add frozen strawberries and cook until thawed. Chill before serving. Makes about 1 quart sauce.

Microwave Place cranberries in 2-1/2 quart glass bowl. Add honey and water. Cook on MEDIUM for 8 to 10 minutes, uncovered, until skins pop. Add frozen strawberries. Continue cooking until thawed.

Honey...Any Time
California Honey Advisory Board

Breakfasts sometimes suffer from the Christmas chaos. Here are a couple of ideas to turn an ordinary breakfast into something a little special. You don't really need any extra time to fix either recipe.

APPLE 'N HONEY SAUSAGES

1 pound pork sausages
1/2 cup apple juice
1 tablespoon honey
1/2 teaspoon soy sauce

Brown sausages and drain off fat. Combine apple juice, honey and soy sauce and pour over sausages. Cover and simmer until sausages are cooked through. Remove sausages. Boil sauce until thickened. Pour over sausages and serve.

A Honey Of A Cookbook
Alberta Beekeepers Association

Now for something to serve with the sausages.



HONEY BROILER FRENCH TOAST

2 eggs slightly beaten
1/4 cup milk
1/4 cup mild flavored honey
1/4 teaspoon salt
8 slices French bread

Combine beaten eggs, milk, honey and salt. Dip bread slices in mixture. Place on greased broiler pan. Broil four inches from heat until light brown. Turn and complete broiling. These can be served with your favorite honey topping.

Treasured Honey Recipes
California Honey Advisory Board

Are you running out of time to make fancy cookies – the ones rolled out to be cut as reindeer, trees and Santa? This most useful cookie recipe can be easily made for Christmas by using some red candied cherries and either green candied cherries or green candied peel.



HONEY COOKIES

1 cup honey
1 cup butter
2 eggs

1 teaspoon vanilla
2-1/2 cups flour
3 teaspoons baking powder
1 teaspoon salt
1/2 cup red candied cherries
1/2 cup green candied peel or cherries

Cream honey and butter until light. Add eggs and beat until light creamy color. Add vanilla and dry ingredients. Beat until well blended. Mix in candied fruit. Drop from teaspoon, leaving room for batter to spread. Bake at 375° for 12 to 15 minutes.

The Honey Kitchen
A Dadant Publication

Sometimes you need a recipe that will serve a number of people. Fortunately this next one is served chilled so you can easily make it in advance.

MARINATED WINTER VEGETABLES

1 package (16 to 20 ounces) frozen mixed winter vegetables (broccoli, cauliflower, carrot blend)
2 medium cucumbers OR zucchini, thinly sliced
1 red onion, thinly sliced and separated into rings
3/4 cup wine vinegar

3 tablespoons honey
1/4 cup salad oil
2 tablespoons soy sauce, regular or mild

Cook frozen vegetables, covered, in small amount of boiling water for three minutes or until just crisp tender. Drain and rinse immediately with cold water and drain again. Place in large salad bowl. Add cucumbers and onion rings. Combine vinegar with honey, oil and soy sauce. Blend thoroughly. Pour over vegetables. Cover and chill two hours or longer. Serve with slotted spoon or drain off marinade before serving. Makes 10 to 12 servings.

Honey Acres Presents
Cooking With Honey

These quick and easy recipes should give you enough time to look for the red ribbon, write a few cards, and decide that the crooked tree has character so you can stop fussing with it. You have the cookie recipe that makes enough for everyone and also for Santa and his "eight tiny reindeer" on Christmas Eve. Go ahead and eat another cookie and enjoy the holiday season. **BC**

Ann Harman is busy baking and getting ready for the holidays at her home in Flint Hill, VA.

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ITALIAN QUEENS & PACKAGE BEES

Nouvelle Cuisine With Honey

The next two courses of our Gourmet menu

Michael Young

Hello, its me- the beekeeping chef from beyond. In the October issue we explored a gourmet menu and presented the appetizer recipe. In this issue I will give you the recipe for the soup and the main course – Honey, Apple & Parsnip Soup and Pan Fried Ostrich. Next time we'll decide on a dessert.

Honey, Apple & Parsnip Soup

This is a real cracker of a soup and you can eat it until you die of gluttony – believe me this is the bees knees. Its an easy soup to make, so easy that you could do it with your eyes closed.

Ingredients are simple to remember. Use one apple and one medium sized parsnip per person. This will provide a hungry mans portion. Therefore let's make eight portions.

Start with eight apples. Use a tart apple – I am not so happy with the European Golden Delicious. They seemed to have lost their appleness, also they are not golden and not delicious in my opinion. If you can't get tart apples cut down on the honey.

Peel both apples (core) and parsnips and one medium onion. Roughly chop them and sweat in a saucepan for a few minutes (with a lid but do not brown them) in 7 ounces of butter. Cover well with water. Gently simmer until the parsnips are nice and soft. Pour into the food processor and blitz until pureed. Place back into the saucepan add 8 ounces of fresh cream & Two Tablespoon of honey, season with salt & pepper. Serve hot with a splash of cream on top.

If you want to show off a little you could fry the parsnip peelings in hot fat until crispy and serve as a garnish also with your soup. Looks good and smells good doesn't it?

Main Course: Pan Fried Ostrich accompanied with blueberry chutney, layered on a burnt caramelized hon-

eyed mash, and served with a whole grain honey mustard sauce, accompanied with root vegetables, topped with red chard and drizzled with a Balsamic and honey flavored dressing.

First off, let's get the accompaniments ready before we mess around with the ostrich.

Balsamic & Honey Dressing

Wow, the sound of this dressing is good enough to bring the cows home and it's so easy to make. You can make loads of this stuff and it keeps for years. Better still, bottle it and triple your price plus your age and sell it at the local craft fare.

When making this dressing all you have to remember is that it all comes down to the thickness, it should be twice the thickness of oil. This will allow it to run beautifully around the plate.

Take two jars of honey and one jar of balsamic vinegar, place in a large saucepan because this stuff froths like the head of a Guinness but tastes much better. Bring to the boil and cook until the thickness is achieved, strain through a fine cloth and serve hen cold. Taste it and let those taste buds have a party. You can add other ingredients whilst cooking to broaden your repertoire, i.e. garlic, thyme or any other herb so don't be shy, go for it.

Root Vegetables

I adore root vegetables. They have a real earthy flavour and plenty of crunch to back them up. You can use any type of root vegetable, but in this meal I recommend turnip, beetroot and carrot. Unfortunately I used all the beetroot so there is none in the photo. (When cooking carrots use a spoon of honey in the water instead of salt, you will never use salt again).



When I am preparing the vegetables, I would turn them into barrel shapes with eight sides. It is quite effective to cut the vegetables into chunky wedge shapes. So, if you get a medium size carrot, cut a 1 inch piece and imagining a box cut from one corner to the opposite corner which should give you a wedge. It looks quite attractive and much better than sliced. Cut all the vegetables like this. You will need three pieces of each, and only use three types of vegetable – remember three and five are the best numbers for balance and attractiveness on a plate.

Cook these off for just a few minutes and refresh in cold water, put to the side.

Burnt Caramelized Honeyed & Onion Potato Mash

This is one of the most popular mashes in kitchens. Today most chefs use brown sugar until they meet me and I show them their mistakes. Use one medium size potato and ¼ of a medium size onion for each person.

Wash, peel, rewash and cut into even size. Cook in boiling water (no salt). Mash the potatoes when ready; do not overcook as we are looking for a firm mash. If you have overcooked it put the potatoes back on the heat and dry them out but don't burn them.

A golden rule on cooking vegetables: if it grows above the ground, put in hot water with no lid, (think of the sun for heat and light). If it grows below the ground, place in cold water with a lid (think of a no sun dark and cold). I hope you can understand that.

Prepare the onion by slicing thinly and placing in a hot pan with a knob of butter. When it starts to go brown, add two good tablespoons of honey and caramelize until brown. Add the mash and mix well. Cook for a further couple of minutes mixing with a wooden spoon all the time. Remove from the heat. Take out of the saucepan into a clean bowl, cling film and keep warm.

Whole Grain Honey Mustard Sauce

Using a thick bottom place in two dessertspoonfuls of whole grain mustard and one dessert spoonful of light honey. Cook out and stir for a few minutes. Add 16 ounces of whipping cream & 3½ ounces of gravy. Stir and reduce until the correct thickness. When ready, put to the side but keep it warm.

Pan Fried Ostrich

We have finally arrived to the main part of the dish. Ostrich is a real Lady-killer and well worth the trouble as it is very low on cholesterol with little or no fat. I know there are lots of beekeepers that adore well done meat but I cannot stress how important it is *not* to overcook Ostrich. Rare is beautiful and Medium Rare is exquisite. To overcook meat is an insult to the meat.

When cooked, it should be richly inviting, deep brown on the outside with a pinkie interior and as juicy as can be. I like meat as though a cow has just walked past the fire, just enough to warm it. The thought of it makes my taste buds dance.

I hope you have purchased a 12 inch white plate for this meal. I expect all my students to purchase one as part of their course, and there are no exceptions here.

Have ready some red chard, lightly oiled with good ole virgin Olive oil.

You will need an average 300gm of Ostrich meat (2 thin slices – about 1/3 lb. slices) per person. Before you start cooking the Ostrich, Heat up the plates.

Put a frying pan on and heat slowly. Add a little butter and ½ a spoon of light honey. When hot, add the vegetables. Roll the vegetables around the pan. Remove them and keep warm. Clean the pan with paper don't wash it.

This is where you have to work and think like a chef! Having heated up the plates place a lightly honeyed 2½ inch ring in the centre. Place the honeyed mash inside, pat and make firm. Remove the ring. Turn round and put the pan back on the heat for the Ostrich with a little oil, about a dessertspoon full. Turn back round and place the vegetables alternately around the mash, leaving a gap between the mash and the border of the plate. Check your pan is not hot. With a teaspoon, place Millers Chutney on the turnip.

Put the plates in a warm oven. Turn around and check your pan, it must be hot. Add the Ostrich to the hot oil and cook for three minutes each side. Remove and place on a paper hand towel. It is important to let the Ostrich rest for a few minutes. Whilst this is doing so, get the plates ready in position.

Place the Ostrich on top of the mash alternately. Pick up the red chard and roll it gently from one hand to the other about three times with out pressing. This will create a nice ball. Place gently on top of the Ostrich.

Drizzle the sauce around the plate lightly, not too much you can always serve the rest in a sauceboat. Drizzle the Balsamic honey dressing around the plate lightly. Stand back and admire. If I am right, a new incarnation as arrived in your kitchen. Like beekeeping food is beautiful and one of the most pleasurable moments we have. Adding honey adds romance to the pleasure. Bon Appetite.

I am still struggling with what type of dessert to use. They are, a classical bread & butter pudding or an exotic Brullee, both are heavenly and sumptuous. I will have to keep on tasting them until I decide. **BC**

Michael Young teaches Culinary Arts and is a beekeeper, wine maker, artist and honey judge. He lives in Belfast, Northern Ireland and will be in Ohio for EAS 2005.



Sideways spacing is sometimes weird, too. No matter the manufacturer, when you put new frames in a new box there's going to be extra room left over. Sometimes a lot, enough for an extra frame even. Slide all those frames to one side. Tight. As tight as you can. Leave that big empty space. Most often the bees will treat it like that big empty space between the bottom board and the bottom bars directly above. They seem to respect this big bee space violation. For awhile anyway, but you gotta keep your eye on it because they won't leave it that way forever. If the frames are tight the bee space - foundation sheet to foundation sheet - should be right and a construction crew can get busy.

The secret Commercial beekeepers know is that you never, ever put new plastic on until just after a honey flow starts. They want the perfect storm of the right bee space, bees with lots of food to make lots of wax, lots of wax-age bees to make that wax, lots of nectar coming in that needs storing, and lots of (and only) wax-coated plastic foundation to store it in. Bees seem a lot less particular where they build comb when it's rush, rush, rush to get it put somewhere, anywhere, and get back and get some more. After all, this is their future!

But take away anyone of these - too few right-age bees, no food and no food coming in to store - and there's no incentive, or capability to build wax cells. Screw up the sideways spacing, even if all the rest is right, and all you'll get are those beautiful, worthless free hanging combs.

Too often there's a mess something like the above when you put a brand new package on brand new plastic foundation. You can mostly avoid this, and fix it if it happens, with a few management tricks. Before we go on, know that this happens, sometimes, with those wonderful wooden frames lovingly nailed together with pure, wired beeswax foundation sheets inside. Especially when those split rivets are used and the wax sags.

Anyway. Start right, for starters. Be absolutely sure the up/down spacing is right between bottom

bars and top bars. Order early (like, now) so if they don't, you can make changes (and tell the supplier the problem). Is there enough wax, actually, more than enough? Make sure you add some if there's not much (and there won't be). Melt down (two pots, hot plate, 2 inch paint brush) old comb, (not too old), busted foundation sheets, cappings, whatever. Paint it on. Lather it on. Lots of it. It's too bad you have to do this, isn't it? You bought plastic to save time. Tell the people you bought it from. (Note to Manufacturers: Think unwaxed, regular, Xtrawaxed when marketing this very good idea.)

Then, put those frames on, push them as tight as you can, (some say dip them in sugar syrup at this stage but it hasn't made a difference to mine) and with all that wax, not much clings), add bees and feed, feed, feed, feed and feed more. A lot of 1:2 syrup with just a pinch of peppermint flavoring or Honey Bee Healthy. Then, if they still build a couple of those weird combs, remove them right away, tighten the frames and feed some more.

Avoid: Don't mix wax foundation and plastic foundation, no matter how much wax you added. Don't put a super with drawn comb (wax or plastic) above a new box with bare plastic. The bees will walk on by. And when plastic is added you want a honey flow going - either syrup or the real thing - so they have food to make wax and a place to build and to store that nectar.

Keep feeding. Don't stop. By Summer's end you should have well drawn out frames - if the flow was good and you didn't stop feeding.

Using plastic frames is different than using all beeswax foundation. That doesn't mean plastic is not as good, that they are more work, that they don't work, or, horrors! They aren't 'beekeeping.' They do, if managed correctly, save time, money and work.

You can choose not to choose plastic. Me, I'll take the week of nights needed to put together all those parts and pieces and exchange them in a New York minute for plastic. Face it, plastic has a place in the beehive.

nals for a few years, you've probably noticed that York Bee Company doesn't have an ad anymore. They've been advertising their queens and packages for 80+ years, and Harvey York was an institution in the U.S., and even the world. Harvey served his industry well in his time, serving as a leader in the American Beekeeping Federation and The American Bee Breeders Association. Plus he was very involved in his church and in his hometown - Moultrie, Georgia.

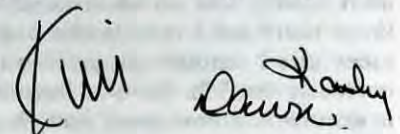
In the pre-mite days, York's was the primary producer of the Starline (4-way Italian cross) and Midnight (4-way Caucasian/Carniolan cross) hybrid queens. They were, arguably, the best queens ever produced. Not surprisingly, the best parts of those are still in the lines of the remaining commercial outfits that were involved in the development of those queens.

After Harvey passed on awhile back the family members still in the business looked the future square in the eye and reluctantly chose to move on to other pursuits. A not uncommon choice in this ever shrinking, increasingly technical environment.

All of us here at *Bee Culture* wish Pat York, and all of Harvey's friends and family the best in your new life. The millions and millions of queens, and the tons and tons of package bees York Bee Company supplied to countless beekeepers the world over are testament to the strength and values of a dedicated family business.

York Bee Company is no small part of why all of us are here, and we all thank you for your contributions. We couldn't have done it without you.

Dawn, Kathy and I, and all of us here at the A.I. Root Company, wish you and yours the very best for the Holiday season. We hope, too, that you and those you love are safe and well and close. But mostly, we wish for all of those in harms' way and far from family, shelter from the storm and a swift journey home.



If you've been reading the jour-

GLEANNINGS

DECEMBER, 2004 • ALL THE NEWS THAT FITS

U.S. BEES BANNED . . .

The European Union has banned imports of live queen bees and queen bumblebees from the United States with the exception of Hawaii.

The Standing Committee for the Food Chain and Animal Health said it acted to protect the EU from the small hive beetle (SHB) and tropilaelaps mite, two pests whose introduction could cause serious problems to the EU apiary industry.

It acted after confirmation of the presence of SHB in a consignment of bees from Texas.

The move to limit the imports of live bees from the U.S. exclusively to the state of Hawaii was based on its geographical and epidemiological separation from the rest of the country and its freedom from bee diseases.

"However, all the remaining states of the U.S. are in consequence banned for export of live queen bees to the EU," the committee said in a statement.

. . . BUT HONEY ALLOWED

The European Commission has re-listed the United States as a third country eligible to export honey into European Union member countries. In June of 2003 the EU had banned exports of honey from the United States.

Although there is not a demonstrable issue with U.S. honey quality, there exist differences in the regulatory approach taken by the European Union and the United States in guaranteeing product purity. In response to the ban, the U.S. honey industry, the National Honey Board and the U.S. Food and Drug Administration crafted a proposal to demonstrate and assure the purity of U.S. domestic honey to the European Community.

In late September 2004, the European Commission accepted the proposal. Under the program, exporters must adhere to specific requirements for each shipment destined to a European Union member country. A package containing specific information and samples for these requirements is available at <http://www.nhb.org/buzz/euprogram.html>.

— Alan Harman

HONORARY LIFE MEMBERS



In Turkey

MAD HONEY STRIKES

A report in Britain's Emergency Medicine Journal said the Black Sea coastal area of Turkey is the location of an unusual type of food poisoning from untreated honey.

It is referred to locally as "mad" honey because of its reputed ability to induce euphoria and sexual arousal in men.

The researchers from the Abant Izzet Baysal University of Duzce in Turkey detailed 19 patients who required emergency care in 2002. The patients, aged from 22 to 61, had symptoms of nausea, vomiting, low blood pressure, slowed heart rate and fainting.

Relatives confirmed that they had eaten between 30 and 180 grams — between one and six ounces — of untreated honey several hours before being admitted to hospital.

After 24 hours in the coronary unit where they were treated with atropine, heart rate and blood pressure returned to normal and they made a full recovery.

The problem with the untreated honey was andromedotoxins, also known as acetyl-andromedol or grayanotoxin. It is found in the leaves and flowers of ericaceous plants such as rhododendrons and azaleas and is extracted by bees.

Grayanotoxin I, one of 18 types of grayanotoxin, was responsible

for Turkish honey poisoning.

The report said 15 of the patients had previously been diagnosed with a duodenal ulcer and this "mad honey" is used in the Black Sea region as an alternative medicine to treat stomach and bowel problems and high blood pressure.

The writers said the severity of symptoms tended to reflect the amount of honey eaten. The symptoms can also include sweating, salivation, dizziness, weakness, blurred vision, chills and cyanosis.

Dr. Hakan Ozhan, of the university's cardiology clinic, said people should be careful when buying natural honey, especially direct form beekeepers.

"There is growing demand for natural honey," he said. "People prefer natural things these days but that does not necessarily mean it is good for you. The industrialization process takes these toxins out of the honey."

"If people are going to buy natural honey they should look at the ingredients and see if it is produced in a country where rhododendrons grow."

Hakan Ozhan said the threshold for toxicity from "mad honey" was not known but in some cases just a teaspoonful was enough to make someone ill.

— Alan Harman

Bill Mondjack (center), President of Lehigh Valley (PA) Beekeepers Association presented the first "Honorary Life Membership Award" to Mr. & Mrs. Myrl Hilbert and Mr. & Mrs. Lee P. Schleicher. Both Mr. Hilbert and Mr. Schleicher have served as President of the association and served on the executive board for many years.

Myrl and Gloria Hilbert have contributed 24 years of dedicated

service to this association. Lee and Carolyn Schleicher have contributed 36 years of dedicated service to the association. Along with the award Mondjack also presented each couple with a "Copper Smoker."

Left to right in the photo — Myrl Hilbert, Gloria Hilbert, Bill Mondjack, Lee P. Schleicher and Carolyn Schleicher.



To Our Many Friends and Customers . . .

We take this opportunity to thank you for your patronage and support during the past year and all the years before. It is you, our faithful, loyal customers who have allowed us to remain in business and complete our 80th year serving beekeepers worldwide. We are deeply grateful to each and every one of you and want you to know you are appreciated.

We wish, for all of you, the most joyous of holiday seasons and a peaceful and prosperous year in 2005. We look forward to serving you in the coming year and far into the future.

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Happy Holidays

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Fitts, Maribeth	Mar	24	Purvis, Dann	Feb	21	OBITUARIES		
Flottum, Kim	Jan	8,64	Reed, Jimmy	Feb	41	Aebi, Ormand	Oct	58
	Feb	8	Rosenberg, Gwen	Aug	55	Anderson, Mary Boyer	Feb	59
	Mar	8,39	Ruzicka, Bill	Mar	37	Balashok, Paul	Apr	75
	Apr	8,37	Sanford, Malcolm T.	Jan	19	Blake, Bennie C. "Ben"	Apr	75
	May	8		Mar	17	Conley, William	Aug	59
	Jun	10		Apr	19	Elzen, Patti	Jul	57
	Jul	10,49		Jun	21	Fisher, Wesley Dyson	Jan	58
	Aug	10		Jul	19	Hitchcock, John David	Feb	59
	Sep	10		Aug	19	Jaycox, Elbert	Jun	57
	Oct	14		Sep	19	Johnson, Paul Axel	Aug	59
	Nov	10		Oct	23	Weaver, Mildred Carlisle	Nov	59
	Dec	8,53		Nov	47	Williams, Dr. Harry	Jan	58
Foster, Bob	Jul	39		Dec	23	Yack, Lawrence	Jan	58

had some trouble this summer with my old one-ton flatbed Ford. My bad luck peaked one Saturday evening when I lost a “dually” wheel while hauling a full load of honey supers through Craig, Colorado.

I won't say it was all bad luck with that truck. It had a few shining moments, like when I rebuilt and re-jetted the carburetor, and the gas mileage jumped from six mpg to 10.

But I was lucky I didn't kill anybody when that wheel came off.

I'd just looked at the wheels, or maybe I should say the tires. I was concerned about tire pressure and overloading the truck, because those were pretty full honey supers. At a highway rest stop, I confirmed that the tires looked fine. I just never thought to check the lug nuts, which must have been ready to come off.

I drove 55 all the way from Steamboat Springs to Craig – totally oblivious to my peril. But maybe I have a guardian angel, because it was on the 35 mph city bypass that I suddenly realized something was horribly wrong.

OK, the wheel didn't literally come off the truck, but it sheared off the axle studs, so the wheel wasn't attached to the axle. Had I been cruising down the highway, the wheel might have gone flying off. I suppose it would have.

A Good Samaritan followed me to the side of the road. He said, “Oh, man, you're not going anywhere now, are you?”

When the Samaritan offered me his cell phone, I called my partner Jack in Meeker. I said, “Jack, I've got some good news, and I've got some bad news. Which do you want first?”

Jack said, “I'll take the good news.”

I said, “I'm still alive.”

“Obviously,” Jack said. “What's the bad news?”

I said, “I need you to come down with your trailer so we can get this honey off.”

Jack's a morning guy. He's not much use after about sundown. He started muttering, but he calmed down when I said, “Jack, you don't have to come right now. Come in the morning.”

“In the morning? Oh, all right, I'll meet you at 8:00,” he said.

I noticed the Good Samaritan swatting at something, and I wondered if it was mosquitoes. He flailed his arms and bobbed his head like he was getting dive-bombed by something.

Then it hit me. Until that moment I frankly hadn't noticed any bees flying out of the supers. I said, “You don't want to swing at those bees. They won't bother you.”

But I was wrong, because they already were bothering him. Now I have to give this guy credit. He really felt he was in danger, and yet he stood by me – a stranger in need. That's my definition of heroism.

He drove me to the Trav-O-Tel, on Victory Way. He said, “Does this place look OK?”

There were geraniums in the flower boxes, and a new metal roof extended over the walkway in front of the rooms. A group of Mexicans sat outside with their shirts off drinking beer. I said, “This is perfect.” When the nice desk lady told me a room was \$34, I was so pleased I never even inquired about my AARP discount.

The room was small but clean. It had pink wallpaper with bunnies in wheelbarrows. The TV worked, and there was plenty of hot water.

Just down Victory Way, on the sign over the front door of the Popular Bar, a well-endowed blonde leans over a pool table to make a bank shot. Inside, the man at the end of the bar said, “If Bush gets re-elected, this country will be nothing but the rich and

the poor. There won't be a middle class.” Then he fell off his bar stool.

At breakfast the next morning at the Golden Cavy Restaurant, I asked the waitress what a “cavy” was. She gave me a look that said if she got asked that question one more time, she'd kill. “It's a herd of horses,” she said. Didn't I know anything?

Signs on the wall read, “No liquor before 7:00 a.m.” and “No hamburgers served under medium well – The Management.” This was my kind of place.

Jack and I got the honey onto his trailer. A friendly cop with “Rebel” tattooed on his arm called his buddy who did emergency road service. Soon I was mobile again, but just for temporary.

Both left rear wheels needed to be replaced, along with the hub. It was Sunday morning, so I resigned myself to another night at the Trav-O-Tel.

Back at the room, I met my neighbor in the room next door, an old cowpoke visiting his daughter in town. “She and I don't see eye to eye,” he said.

I had the truck parked in front of his door. The cowpoke said, “What's that smell?”

I explained to him about Bee-Go and asked, “Does it bother you?”

He said, “Let me put it this way. I'd move that truck before the manager asks you to.”

By the time I paid my repair bill the next morning at the junkyard, I was out over \$500 for the weekend. But what are a few expenses when your bees are in a big honey flow? Honey prices were still sky-high. I was on the road again. And I'd learned an important life lesson: always check your lug nuts.

Ed Colby

Breakdown In Craig