

COVER PHOTO BY
SANDRA WILSON

JUNE 2001



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Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

JUNE 2001 VOLUME 129 NUMBER 6

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Behold The Basswood (*tilia* sp). At one time basswood was a chief source of white honey in the U.S. When the conditions are right, a single basswood tree could provide a colony's entire honey crop. But Basswood are unpredictable – too hot, too dry, too wet, too cold, too windy – not only this year but last, and the bees don't have a crop, and neither do you. But when it works the honey is wonderful. Somewhat strong, perhaps a bit minty (said by some), with a not unpleasant aftertaste. Depending on variety and location it blooms this month or next. (photo by Kim Flottum)

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MAILBOX

Watch Your Neighbor

Recently, we were almost out of our honey so we called an unknown person who was running an ad in our local paper with honey for sale. I thought maybe I could make a new beekeeper friend and possibly help each other out someday. What transpired was the farthest from my mind.

We bought a gallon and headed home with out sweet treasure. At first we noticed it was darker than normal and it appeared very thin. During our conversation I found out that they were not beekeepers at all. He was a truck driver and somebody had given him this "Honey" because it was "Frozen." This already sent up one red flag. Their ad said \$1.00 a pound, but she charged me \$15, as we all know there are 12 lbs. in a gallon. This was red flag number two.

This "Honey" tasted sweet, with a different back taste that stayed with you for a while. It was very thin, like cheap pancake syrup.

It tasted so bad, we were not going to eat it, and my wife said to feed it to the bees, but I'm not going to feed them something unknown. The more I thought about it, the madder I got. It wasn't the money, it's the thought of them selling this as honey to the unknowing public and hurting the whole honey industry.

Two days later I called them back, but before I could threaten to get it tested, she admitted it might contain corn syrup and a lot of unknowns. She got very upset and even accused me of trying to stir up trouble for them. I told her to have her husband contact me within the next week. Within the next hour he left a message for me stating I had purchased HoneyPlus. A few hours later, he is at my back door with four quarts of honey. He explained that some of his customers like this Honeyplus because it doesn't granulate. I tasted his honey and I

didn't care for it either, so he refunded my money. I have left out a lot of details, but her story and his story, just didn't add up.

I repeatedly warned them, that they cannot market this as honey and I was doing them a favor for not turning them in. He assured me it was an honest mistake. I believe he just got caught.

The biggest surprise, he was so proud that his father was our county bee inspector for 36 years until his retirement in the mid 80s.

I will keep an eye on these people. Maybe you should check your neighbors.

Ray Moeller
Celina, OH

Politics

Your reference to politics in the April issue (2001) of *Bee Culture* was unfairly negative.

Relative to the reasons for good attendance at a certain county meeting in Ohio you wrote: "No politics. No government programs. No write-your-congressman speakers."

In my view, your comment would be free from nitpickers if you had wrote thusly: "No partisan politics. No government help programs. (Number three should be deleted.)"

There is crying need for us (entire honey industry) to give some in-depth attention to politics and economics. As you know, most of our editorial attention is Entomology. In my view, editors can and should give some attention to these disciplines.

Glenn Gibson
Minco, OK

Bear Experience?

After 53 years, three years or 10 years I don't think our experience with bears gets any better.

I got two Critter Getters in the middle of it and it wasn't successful. Maybe I didn't know how to set

them or these bears were too acquainted with human beings in and from the 'bear sanctuary.'

I am wondering if we could all have a 'honey bee sanctuary.'

The Game Warden informed me that the bears were here first and they only robbed hives when they are hungry - I was so angry by this time and trying not to show it that I guess I couldn't think straight.

I was an instructor for adult education for several years. I would like to have had him in my problem solution class.

Here are a few questions that should be brought up.

1. When a farmer runs into a shortage of feed he has two options
 - a. Buy feed for his livestock
 - b. Sell them down to the capacity of the available feed.
2. When bears run short of feed
 - a. buy feed for them
 - b. cut down on numbers it will carry by making bear rugs and having bear steaks available to the public.
3. Another suggestion that would probably come up is
 - a. Mark any bee and honey robbers and the second time they were offenders have them made in to bear rugs and steaks.
 2. Or those people who love bears have a tight fence sanctuary so their admirers could get to see them often or put them in a zoo.
 3. Have them up for adoption and feed them and make pets of them.

Another question that might come up in this class is

1. Why didn't we have a buffalo sanctuary on the great plains as the buffalo were there first.

He said they had a bear hunting season, and 375, I think, were shot. (They probably killed all the stupid young bears and not the

MAILBOX

smart bee robbers.) What was the result? The results were not satisfying.

I made a survey of the existing conditions:

1. Any bear caught robbing beehives be converted into bear rugs and the meat sold as a delicacy.
2. Increase hunting drastically
3. Poor third was if a second of-fender, make bear steaks.
4. A close four to sell excess bears as steaks and rugs as they would like to have a taste of bear steaks (this would provide money to feed bears left.)

Other answers from humane society people:

- a. Castrate all males.
- b. Fix all females.
- c. Have a high wire fence and put all the rest in there.
- d. Offer cubs up for adoption.
- e. Put more bears in zoos.

If they were beekeepers they voted the only good bear was a dead one.

A lot of the answers I never thought of

Many expressed that the rugs and steaks would help with expenses. Many expressed a keen interest in tasting bear steaks. Personally I would never thought of a lot of these answers.

About 40 years ago when the family was in the Black Hills I treated the family to buffalo burgers.

The interest in tasting bear steaks surprised me and I got to thinking you know I'd like to taste bear meat and I don't know where a person could get one.

Anyway you look at it, it cost me over \$1,000 to feed the bears and this didn't make me happy.

Jim Hagemeyer
Madisonville, TN

Richard & Wise Guy

Certainly, Peter Garnham's letter in your April issue concerning attitudes toward beginners or hobbyists makes a valid point. There seems to be in practically all walks of life, a certain "one-up-manship" as concerns one's

"status" as a beekeeper depending on your size.

If you're large, that means you are, perhaps, an instant expert. If you're small, you don't get much respect and are the effect of condescendence. Yet, there are sure many BMOC's (big men on "campus") who are understanding and helpful and most patient as well - just visit the net site, sci.agriculture.beekeeping.org for some helpful advice and occasional drama, as well.

Yet, I think it was Eleanor Roosevelt who remarked "No one can make me feel inferior without my permission." So, we hobbyists can continue to make our contribution and have a positive attitude and reap the rewards of our love of nature and working with our little bee creatures. We don't have to take it on.

Incidentally, I appreciated the editor's note about Richard Taylor—I have found him to be a most respectful and inspiring writer who has taken the time to write about all the rewards of working with bees in so many different respects.

His column has often felt just like he was sitting on the other end of a log speaking just to me. I'll admit, sometime his speaking turns a little bit into preaching but only because he is such a passionate man, speaking his mind. He has taken the time to answer in long hand my letters to him and to address certain bee questions I've had over the past few years (with respect and feeling for me being a beginner).

So, I'm sure that Peter Garnham's comments are those of misunderstanding of a person who I consider one of the greats in our field who communicates so well the philosophical aspects of beekeeping, nature and life and brings home to the reader the sweet rhythms, smells flavors and mysteries of the world of the bees.

One of his books is called "The Joys of Beekeeping" - well, Dr. Taylor is a joy to read and gives all of us beekeepers, especially the hobbyist, a wonderful gift in his writings and the appreciation of keeping things both small and simple. Truly, Dr. Taylor is a personification of an educated, enlightened but "small beekeeper!"

(I would hope sometime to see another book of his writings/ columns so I won't have to keep going back and re-reading!)

Thanks, too, to Wise Guy's column in the April issue on us "sideliners." A terrific column and well said, although in many cases, instead of selling our "200 pounds" we simply enjoy gifting it to others, along with our time to try to turn on others to this wonderful craft.

Leland "Lee" Larson
Happy Valley, OR

Keeping Skunks Out

It's this time of year that a lot of beekeepers have skunks start working on their beehives. The skunks can eat a lot of bees and later on they start teaching their brood the same profession, and they keep coming back if they aren't stopped some way.

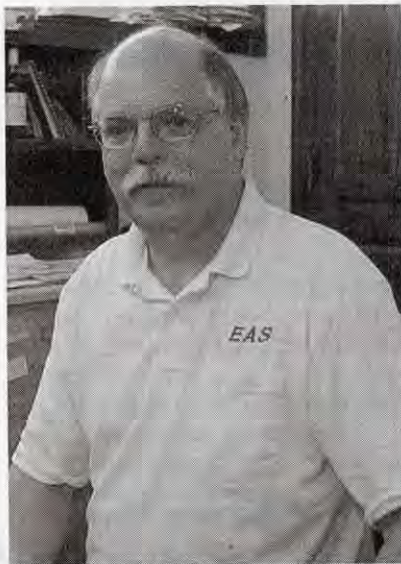
I am enclosing a photo showing my method of keeping the skunks from molesting and eating my bees. I haven't had a single hive bothered by the skunks since I have been using this method. Of course this isn't practical for the migrator or anyone with a large amount of bees.

I use concrete blocks and 4x4s, eight to 10 feet long about 12" to 14" off the ground. These colonies are close together. This method sure stopped the skunks for me, and I don't have to trap or kill them.

I would recommend this way of beekeeping for anyone having three to 12 colonies, that doesn't move their bees. I thought perhaps *Bee Culture* and the readers might be interested in this techniques. I have been a beekeeper for 58 years and a subscriber to *Bee Culture* for 50 years.

Floyd Helm
Odon, IN





INNER COVER

Lots of people have fewer bees this summer than they had last summer. Which means lots of empty supers, frames just sitting around, bottom boards piled up, covers piled up and all the pieces and parts normally used not being used. So. Is this a good time to clean up all that stuff or what? You betcha!

Start with all those frames not being used, especially brood frames. Have a bunch

with lots of holes, warped, drone comb, wires showing and black as the ace of spades? Clean them up while you have a chance. Remember, if the comb is so old, and so dark, that when you hold it up to the sun you can't see light through it, it's too old. It is dirty, full of propolis, pollen, dirt, residual natural toxins, and residual not-so-natural toxins. It probably has some AFB spores lurking in there somewhere, along with chalkbrood, nosema and all sorts of other nasty things hiding in the cracks and crevices.

Save all the wax and the scrapings for later. Clean the frames as good as possible with your hive tool, or anything that works to clean small places, if you don't have a frame cleaner tool. They are made for one thing, work well and are inexpensive. Try one this year.

If you have had a problem with AFB in the past and want to save the frames, but need to clean them, a tedious, but inexpensive way to get rid of any AFB is to boil them in lye water. Use one pound of lye (sodium hydroxide drain cleaner at the grocery store) in 10 gallons of water. Bring to a boil and put in the frames... of course you need something big enough to hold 10 gallons, and lots of frames. But this does clean them up. Don't overdo the boiling (20 minutes is usually good enough), because the wood and nails start to be affected by the caustic lye after that. Drain, rinse and dry before using, but just skim the goo off on top of the liquid and use again for more frames.

Scrape any wax and propolis from the inside of supers. The common hive tool, like we use today, was first designed in 1905, and it has been around for 90 plus years for good reason. Sharpen it once in awhile when scraping and the job goes faster. But be careful...a sharp tool can do lots of damage to hands, tendons, fingers, veins and arteries if it starts jumping around over those lumps of propolis. Save all the stuff that comes off though, it's worth money.

Of course now is a good time to paint or restrain all those empty boxes. White is fine, pretty much necessary in the south, not at all in the north. Get wrong-color paint at paint stores, hardware stores or anywhere they are looking to get rid of the stuff for ten cents on the dollar and sometimes for a lot less. Get good stuff, that will last, but who cares what color....the bees sure don't. If doing this outside, stack up eight or ten supers, and put a stake in two corners to hold them in place. That way they don't dance around when putting pressure on the roller (yes, use a roller), or touching up with the brush later. When done painting, take out the stakes and use for the next batch.

When rewiring frames do it right the first time. Renail any that are loose, don't have all the nails (remember all those you bought a few years back that only had four nails that you swear at every time you pry off a top bar?), and use good foundation. You

might try some of the drone comb available in a few, and control, pretty much, where that goes, instead of the bees putting it where ever they want. Wire well and stout, put the frames back in the now-painted boxes and get ready for making late summer and fall splits, so you can get back to where you were last fall.

Of course there are more and more people wondering about the value of doing all this when all-plastic frames can be had just by taking them out of a box...no fuss, no labor, no problem. I tend to favor this mode of action, but there is an initial cost. However, check out the cost difference when considering wire, nails, wax. This, however, doesn't come close to the time savings, which is at the top of my list of important things to consider. For me, and for many, old frames are kindling, and replacements are plastic. Fact of life.

You also need to be right on top of taking care of those colonies that survived, and the packages or nucs you bought this spring. If you are going to do fall splits (check out our next issue on the best way I've ever seen on how to do fall splits) you need healthy, strong colonies so both the parent and split make it through winter. Lots of food, lots of room, lots of TLC. Keep mites down, if not out, and every disease definitely out all summer. Harvest only enough and not too much, so you have more than enough for splits, for wintering and just in case...

This is the rebuild year. You can make *some* honey, and *some* money this year, have refurbished equipment, and more than enough colonies for next year's production, pollination or just to fill all those empty stands if you start now, and do it right.

In the mean time, keep your smoker lit, your hive tool sharp (especially after cleaning all those boxes) and your fingers crossed. The rest of the year will be better.

Rebuild Year



I have been reading with great interest the results of the two industry round tables, one in Washington, DC and the other in Reno, and am pleased with the effort of industry to talk with each other. I have read at the Washington meeting that the participants listed in order of importance the key areas of our industry. The number one concern was to keep the wholesome image of honey. On the surface that seems like a statement we all need to live by. As a trade organization or industry or farm group whichever one we fall under we all need to appreciate that idea and put the best food product of our industry on the shelf.

I have to tell you that I believe a portion of that group doesn't care about the image. All they care about is the income. Some bottlers and packers of honey in this country have compromised the good name of honey with the idea of making more money. As long as that group is allowed to blend cheap foreign imported honey with quality U.S. honey, the statement about keeping the wholesome image of honey is not their number one priority. To enhance our income should be their number one area of importance. If

you would read the Anti Dumping testimony you will read that packers use foreign honey to blend with our honey to make it go further. It is somewhat like adulteration to me. You also read that honey from China has a taste profile of its own. Is that good or bad? I assume that the taste is not favorable, so that is why it is blended with U.S. honey. Does this sound like someone wanting to keep the wholesome image of honey or someone wanting to blend an inferior product with a superior one thus making an average product. This is the textbook definition of lowered quality.

If we continue to allow blending of any honey in this country we will never have a stable honey price. We will live with peaks and valleys because the bottlers have only one method of selling honey and that is price. I assume their sales departments only operate like that old game show "Name That Tune." Remember you had to guess how many notes of the song would be played before you could name that tune. So I assume instead of saying I could name that tune in five notes their sales people say I can sell you that honey cheaper than the competition. By doing this the honey bottlers have

told their buyers that all honey is the same and all they are selling is the name. We have allowed honey packers to degrade our domestic product with cheap foreign honey.

If we continue to allow the marketing of honey to be the one with the cheapest price then the industry at the producer level will disappear. If we continue to allow price to be the number one selling point then do you really think the packers want to protect the wholesome image of honey or do you think they want to protect their wholesome way of life.

Wise Guy

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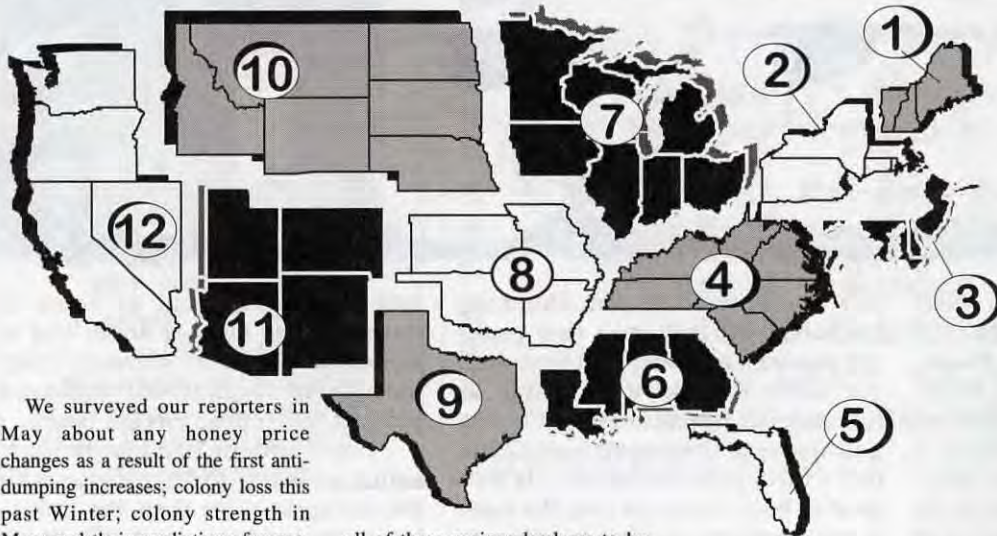
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JUNE - REGIONAL HONEY PRICE REPORT



We surveyed our reporters in May about any honey price changes as a result of the first anti-dumping increases; colony loss this past Winter; colony strength in May; and their predictions for success this coming season.

Overall, only 11% have raised prices. 11% report colonies above average strength, 31% report colonies in average shape and 58% report colonies at below average strength. 13% are optimistic the season will do well, 59% seem to think it will be an average year and 28% feel it's going to be below average. Interestingly, the overall average for colony loss was only 35%, high, but not as high as originally thought. This does not weigh size of operation however. Across the north (1,2,7,10) losses were right at 51%. Central (3,4,8) at 32%, south (6,7,11) at 21%, Florida was at 8% and the west coast at 30%. Talking to beekeepers in

all of these regions leads us to believe that, when weighing size of operation, a number closer to 50% is more realistic, but still unproven.

Region 1

Prices steady to increasing, 50% loss, colonies understrength and mildly unoptimistic.

Region 2

Prices unchanged, 51% loss, colonies understrength, season looks average.

Region 3

Prices unchanged, 43% loss, understrength but mildly optimistic

Region 4

Prices steady, 26% loss, colonies mostly understrength, average outlook.

Region 5

Prices unchanged due to anti-dumping, so far. Only 8% loss, colonies strong early and an average season expected.

Region 6

Prices inching up, 12% loss, colonies strong and outlook good.

Region 7

Prices unaffected so far, 55% loss, weak colonies early and outlook definitely not optimistic for the season.

Region 8

Unchanged prices, 27% loss, colonies not up to par and outlook mixed.

Region 9

Prices unchanged, 20% loss, colonies not strong, but outlook mildly optimistic.

Region 10

Prices moving up a bit, 48% loss, weak colonies and outlook not optimistic.

Region 11

Unchanged prices so far, 30% loss, weak colonies but some optimism showing up.

Region 12

Prices unchanged, 30% loss, colonies in pretty good shape (probably better than anywhere due to pollination requirements), and guarded optimism.

	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																	
60# Light (retail)	68.16	65.75	74.00	76.83	75.00	64.67	61.33	60.81	65.00	77.50	88.50	50.00	45.00-140.00	68.73	70.14	71.78	
60# Amber (retail)	66.46	62.69	68.00	72.63	75.00	64.00	62.43	56.50	80.78	62.00	83.33	45.00	45.00-130.00	67.33	68.15	66.89	
55 gal. Light	0.57	0.70	0.58	0.64	0.53	0.54	0.59	0.61	0.45	0.62	0.63	0.63	0.45-0.70	0.59	0.63	0.63	
55 gal. Amber	0.55	0.68	0.59	0.63	0.55	0.53	0.54	0.73	0.51	0.59	0.57	0.58	0.45-0.73	0.58	0.59	0.58	
Wholesale - Case Lots																	
1/2# 24's	28.06	25.12	31.22	32.22	21.50	26.50	28.06	31.22	30.00	31.22	24.00	35.20	20.40-44.40	28.86	29.91	29.26	
1# 24's	41.88	38.63	48.00	45.19	38.00	44.50	40.63	44.46	43.93	40.20	47.33	48.85	34.10-54.00	42.94	42.65	42.45	
2# 12's	38.07	34.19	45.60	43.48	40.00	36.30	37.10	42.36	39.50	35.40	46.00	40.33	29.40-52.58	38.89	39.80	38.51	
12 oz. Plas. 24's	35.78	33.32	45.60	35.95	35.00	40.90	34.54	34.44	40.48	31.80	42.00	37.40	26.40-54.00	36.39	36.79	37.50	
5# 6's	40.91	37.71	54.00	46.17	44.18	46.50	39.23	39.00	42.50	45.00	50.00	36.00	30.50-60.00	42.03	42.72	41.53	
Retail Honey Prices																	
1/2#	1.76	1.56	2.83	2.17	1.05	1.47	1.56	1.71	2.00	1.49	3.00	2.04	0.95-4.00	1.77	1.88	1.62	
12 oz. Plastic	2.31	2.23	2.90	2.59	2.16	2.44	1.96	2.14	2.57	2.08	3.45	2.23	1.29-5.00	2.32	2.29	2.18	
1 lb. Glass	2.80	2.21	3.00	3.40	2.65	3.09	2.36	2.65	3.45	2.39	3.42	2.81	1.50-6.00	2.82	2.85	3.43	
2 lb. Glass	4.52	4.40	4.80	5.91	4.16	4.50	4.01	4.62	5.06	4.21	3.29	4.45	2.59-7.00	4.61	4.44	5.70	
3 lb. Glass	6.06	6.98	7.80	7.29	5.15	6.49	5.50	6.23	6.33	5.19	5.63	5.78	3.49-9.00	6.23	6.36	7.45	
4 lb. Glass	6.87	5.40	7.08	9.71	7.08	7.03	6.89	4.98	7.00	8.50	7.08	8.20	5.99-12.00	7.24	7.94	9.22	
5 lb. Glass	9.23	7.86	11.00	10.61	9.33	8.25	9.32	10.99	9.00	10.00	10.80	7.49	6.50-16.00	9.50	10.89	10.83	
1# Cream	3.33	3.05	4.15	3.87	4.15	3.26	2.59	2.97	6.99	3.04	5.17	2.88	2.09-6.99	3.36	3.37	3.05	
1# Comb	4.32	3.94	3.60	4.32	4.64	4.17	4.09	4.49	4.64	4.64	6.75	5.50	1.95-7.50	4.46	4.36	4.01	
Round Plastic	3.66	3.11	3.60	3.94	3.91	3.50	3.70	3.83	3.38	3.91	4.92	3.85	2.95-5.00	3.78	3.82	3.82	
Wax (Light)	2.53	3.14	2.30	2.10	2.86	4.00	1.88	1.95	3.50	2.86	2.05	3.17	1.00-5.00	2.58	2.21	2.69	
Wax (Dark)	2.11	2.18	2.08	1.67	2.50	3.50	1.79	1.05	2.65	2.50	1.50	2.13	0.85-4.50	2.15	1.86	2.39	
Poll. Fee/Col.	37.31	39.00	34.00	37.67	30.00	36.33	41.00	40.00	24.00	37.78	50.00	37.75	20.00-55.00	38.33	39.38	37.91	

? DO YOU KNOW ?

Pollination

Clarence Collison
Mississippi State University

Numerous crops throughout the United States, as well as many non-crop plants, rely on honey bees and various species of wild, native bees for pollination. Many commercial beekeepers move and rent honey bee colonies to growers to meet this pollination need. Pollination has long been recognized as the most important contribution that the beekeeping industry makes to agriculture. As agriculture has changed over the years from the small, diversified family farm to large monoc-

ultures (large acreages of a single crop), the need for honey bees has greatly increased. In addition, as plant breeders develop new hybrid varieties, cross-pollination resulting from insect visitors is an integral component in varietal development and seed production.

Take a few minutes and answer the following questions to determine how familiar you are with the basic principles of pollination and specific crop pollination requirements. The first ten questions are true and false.

Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect.

1. ___ The effective life of individual watermelon flowers for pollination is two days.
2. ___ Honey bees are used in the production of onion and carrot seed.
3. ___ Muskmelons have both male and female flowers.
4. ___ Honey bees show a preference for the extra-floral nectaries of cotton in comparison to the floral nectaries.
5. ___ In peach pollination only one ovule must be fertilized for a peach fruit to set.
6. ___ Bees are essential to cranberry pollination.
7. ___ Pollen must be transferred from male trees to female trees in the production of dates.
8. ___ Eggplant flowers, like tomato, are wind pollinated.
9. ___ Cranberry flowers are very attractive to honey bees.
10. ___ Soybeans are considered to be self-fertile and do not benefit from insect pollination.
11. Define buzz pollination. (1 point).
12. Compare the pollen characteristics of wind and insect pollinated plants. (2 points).
13. What is the difference between a pollinizer and a pollinator? (2 points).
14. What are two disadvantages of having colonies of honey bees sitting at the edge of an orchard year-around (2 points).
15. Name four characteristics why the honey bee is the preferred pollinator for many crops. (4 points).
16. Explain what is meant if a crop is self-unfruitful. (1 point).
17. Please explain why the bumble bee is the preferred pollinator of red clover and leaf-cutter bees and alkali bees are preferred to honey bees for alfalfa pollination. (2 points).
18. In pumpkin and squash pollination, what is the time of day when pollination is most effective. (1 point).

ANSWERS ON PAGE 40

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Quotes



“At this meeting we set Canadian research priorities for the next few years, and by verbal agreement or subtle territorial behavior we decide who will do what.”

I am an intemperate collector of quotes, and have long-maintained a thick red journal in which I painstakingly copy incisive phrases and sentences from the writings of others. I copy these quotes out laboriously, by hand, in ink, rather than quickly typing them into a computer file, evidence of the high esteem in which I hold the telling thoughts of others.

The quotes that make it into my red book are quirky and eclectic, with little obvious thematic consistency or stylistic rhythm. The first, for example, is by the writer Hayden Carruth, from the *Sewanee Review*, in which he talks about how farmers are people of substance, experience, and intelligence. The most recent was from a newspaper article in which Justin Trudeau, the son of Canada's recently deceased former Prime Minister Pierre Elliot Trudeau, extols risk-taking in teaching. In between is a five-line poem by John Downes written in olde England that evokes the most degrading and vile image I've ever read in print (and no, I won't repeat it here, or anywhere else for that matter), as well as a quote from Adam Gopnik from *The New Yorker* in which he writes upliftingly about how continuing life through becoming a parent is the only majestic choice most of us get to make.

I save quotes for many reasons, among them a pure love of good writing and an admiration for perfect phrasing. The writing of others also

inspires me to strive in my own writing for those rare moments of crystal clarity that leave readers in awe of that inexplicable space on the page where words align themselves. Rarely achieved, I freely admit, but nonetheless a goal always on the writer's horizon.

People often send me quotes, perhaps sensing my delight in a well-turned phrase. These unsolicited quotes gratify me for another reason, because they often arouse thoughts that venture far from the quote itself and connect with something else seemingly unrelated that I might have been pondering at the time.

A recent letter I received from a Wisconsin beekeeper, Wally Diehnelt from Honey Acres, contained such a connecting quote. Wally sent me a photocopy from an 1882 book by the Polish priest Jon Dzieron called “Rational Bee-Keeping,” which began: “*The keeping of bees is an occupation as pleasant as it is profitable. Nothing affords such pure and lasting pleasure as the contemplation of the works of the Almighty in the wonders of nature*”

I had taken this quote with me last January to the annual meeting of the Canadian Honey Council in snow-encrusted Moncton, New Brunswick, for no particular reason except that I frequently get stranded when travelling through Canada in the winter. I wanted something to think about if I had a few days to kill stuck in a cold motel room somewhere waiting for the runway to be plowed and my flight to leave. I

wasn't stranded on this trip, but events at the meeting got me thinking about research, and about the unique traits scientists bring to contemplating the works of the Almighty and the wonders of nature.

This meeting included a long-standing tradition of the Canadian Association of Professional Apiculturists and the Honey Council to conduct a research planning session every five years. At this meeting we set Canadian research priorities for the next few years, and by verbal agreement or subtle territorial behavior we decide who will do what. This has proven to be an enormously useful exercise, because in a lightly populated country like Canada we have finite scientific resources to draw on in conducting critically important studies, especially for a small industry such as beekeeping. Thus, cooperating by intelligently discussing and dividing up the research turf is essential if we're going to take maximum advantage of limited resources.

The priorities we decided upon were interesting in themselves, but as we talked I began to perceive some of the characteristics of the scientific mindset that percolated beneath the ranking exercise. For one thing, it was difficult to keep the group “on task,” not because we scientists have a communal attention-deficit disorder but because of the intense curiosity that drives us to probe well beyond the job at hand towards bigger issues.

A simple point might come up, perhaps the question of how a new

Continued on Next Page

"It's probably a quixotic suggestion to my fellow scientists, but think about starting your next paper or talk with a quote that reminds you and your audience about the mysteries of the hive and the wonderful tapestry of nature to be read through contemplating that ancient creature, the bee."

pesticide could affect bees, and before long someone would begin musing aloud with the telltale phrase that initiates most scientific discussions: "I wonder if . . ." Soon, the planning meeting was throwing around ideas about brain chemicals in bees, or drifting into a discussion of how ecological communities might be disrupted by changes in pollination patterns induced by pesticide impact. Eventually we returned to the task of priority-setting, but not before many pleasant diversions through the garden of wondering.

Another trait that kept popping up concerns how we scientists go beyond wondering into testing. Any research problem posed by the group was guaranteed to evoke the "Hmmm, how can we test that?" question, followed by a rigorous and probing argument about what experiment would adequately prove or disprove any posed hypothesis. This concept of rigor, of demanding data to satisfy queries, is a uniquely scientific contribution to human thought, and certainly is a signature characteristic of the scientific mind.

A third and little-appreciated feature of the scientific persona that struck me as I watched my colleagues discuss and probe was the intensely social nature of science. The image most civilians have of scientists is of isolated, socially bankrupt, and disreputably clothed nerds. The clothing part is probably right, but as for socially isolated, hardly. Science is a field of intense human interaction, with laboratory groups, frequent professional meetings, and an inordinate fondness for late-night, free-ranging debate.

Returning home, I ran the word "scientist" through my computer's

thesaurus program, curious about what others have thought about scientists. To my surprise, words like controlled, ordered, methodical, and thorough came up, and no words like passionate, intense, curious, or social.

Scientists may indeed be methodical, but science is much more than organized information. Dzieron's quote about keeping bees is just as applicable to bee scientists as it is to beekeepers. We may use more numbers to organize our wonder than beekeepers, but beneath data lies lasting pleasure in contemplating the glory of nature nonetheless.

I thought back to an earlier time in my life, when I was first discovering the thrill of doing science and was reading voraciously every inspiring book I could find about scientific discovery. I came across a gem of a book by the late ecologist Robert Macarthur, called *Geographical Ecology*, and a few sentences from the frontispiece of his book grace the pages of my quote book even today:

"Doing science is not such a barrier to feeling or such a dehumanizing influence as is often made out. It does




not take the beauty from nature. The only rules of scientific method are honest observations and accurate logic. To be great science it must also be guided by a judgement, almost an instinct, for what is worth studying. No one should feel that honesty and accuracy guided by imagination have any power to take away nature's beauty."

Yet, beekeepers reading the typical scientific paper about bees or hearing one of us talk at a meeting would certainly be left with the impression that imagination and nature's beauty were far from our minds. Our training suppresses the emotional and teaches us to express the tangible, but in doing so we are doing a disservice to the underlying power of the natural world to move us.

There is poetry in an elegant experiment, wisdom in the ordered revealing of patterns through data, and inspiration in the simple truths that emerge from quantifying the activities in a bee hive. We scientists often stop at the data, but perhaps we should go further to express the feelings unleashed by the act of studying nature and the discoveries that inquiry can bring us.

It's probably a quixotic suggestion to my fellow scientists, but think about starting your next paper or talk with a quote that reminds you and your audience about the mysteries of the hive and the wonderful tapestry of nature to be read through contemplating that ancient creature, the bee. Data and experiment may test hypotheses about nature, but only human emotion can evoke the reasons behind why we probe. ☐

Mark Winston is a professor and researcher at Simon Fraser University, Burnaby, B.C., Canada.

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Dick Bonney

April 22, 1929 - March 26, 2001

Dick Bonney's education was in landscape architecture and science, but his first career was in computers, dealing with contracts, government bureaucrats, and the administrative side of this business. During this time his love of nature, and his desire to be outside the office was always strong. Driving perhaps. To get there he was a camper, a sailor, a pilot, worked with scouts and was a voracious reader of the authors of the outside world - Aldo Leopold, Borland and many, many others. Trips to the library were adventures in what could be, away from the office, outside. One book caught his attention during this time - *The Joys of Beekeeping*, by Richard Taylor. This was in the early 70s and in the jargon of the day "That sounds cool" was Dick's response.

The book struck a nerve, and soon Dick had a colony or two on the roof of his sundeck in Cinnomonson, New Jersey. A beekeeper was born.

The grind of bureaucracy, and the lure of New England, by the late 70s moved Dick and his family to Charlemont, Massachusetts. A Bed and Breakfast? Commercial Beekeeper? Located on the tourist-rich Mohawk Trail both were enticing, and possible. The beekeeping business won though, and by 1978 Dick was running Charlemont Apiaries, involved in honey production, pollination, queen rearing and equipment sales.

By 1980 he was a seasonal inspector and was also teaching a six-week beginning beekeeping course at North Adams State College and Greenfield Community College. He was also a visiting lecturer in the Continuing Education Department at the University of Massachusetts in Amherst. There he taught a three credit Practical Beekeeping course, a six-week beginning beekeeping course and held one-day workshops.

Later he started another business, Apicultural Associates, offering consulting services to beekeepers and growers. This continued to the late 90s. But in 1990 he was formally appointed as Massachusetts Extension Apiculturist with the regular outreach responsi-

bilities including publishing a wealth of information for state beekeepers in his bulletins. He held that position until he retired in 1997.

In 1990 his first book, *Hive Management* was published by Garden Way, followed in 1993 with *Beekeeping: A Practical Guide*. Both are excellent.

Back in 1987 for the first time I put copy on the cover of this magazine instead of just the title and the photo. As with some first attempts, a word was misspelled - hobbist (instead of hobbyist). This error was brought to my attention by a good number of people, mostly in good nature. Dick sent a fairly long non-critical letter, explaining *why* the word was incorrect - our first contact. A few more letters made



it into the magazine in the next couple of years, usually pointing out omissions in articles, or clarifying statements made and not explained. He also began sending me his newsletter, which was a delight in its clear writing, touch of humor and his fundamental understanding of both the practical and scientific side of our craft. Other letters and phone calls brought to light his beekeeping, teaching and business experience.

In 1990 we finally met at a New York meeting. I encouraged him to make some contributions. He was reluctant, not because of time, but he felt inadequate(!). But in 1991 he sent one in. Then another. And another. He could explain, in his easy-to-read style, and easy-to-understand language not only the most complex honey bee biology, but the fundamentals of practical beekeeping management.

Soon he was a popular addition to this magazine. Very popular. His regular column, and occasional special projects were the first-read of thousands of readers, and an often-heard complaint was "Do I read Dick Bonney or Richard Taylor first?" Considering how Dick got his start, this "problem" only made me smile.

During the 10 years he wrote here, Dick did other jobs for us. He edited our *Selling Honey*, *Queen Management* and *Swarming* books, taken from a variety of authors' articles in this magazine over the years. His style made them seamless and read with ease. He also worked on the year-end index and tried new equipment for us.

The over 100 articles he produced were always, or almost always a collaboration of Editor and columnist. His goal was to offer what readers wanted, when they wanted and needed it. He never once sent in only what he wished to write about, always offered new perspectives when revisiting the common and seasonal topics, and always, always was on time. From an Editor's perspective he was Gold. During this decade-long friendship I got to know of his family, the strong support of his wife, Joan and the accomplishments of his children, in which he took great pride. And over all this time our discussions, allowed us to focus on what was important, why we always needed to be accurate and the constant need for clarity.

The unfairness of human frailties is difficult to understand and often more difficult to accept. But, gone sooner than we would like, what this quiet, gentle man has left us, his family, and the thousands of people he touched will stand strong after we, too are gone. Thanks Dick.

Kim Flottum, Editor



THE Q Q Q QUEST FOR QUALITY QUEENS

As a queen producer you build the foundation of the industry. As a honey producer and pollinator, you rely on the quality of queens purchased.

Susan Cobey

The quest for quality queens is a pursuit of every beekeeper, or at least should be, inclusive of both commercial and hobby interests. It is the demarcation between the beekeeper and the keeper of bees. The queens in your hives play a major role in determining your colony productivity and profitability, as well as the level of enjoyment of your beekeeping experience.

Selecting and producing good breeding stock or choosing a reliable queen producer to supply your needs is critical. As a queen producer you build the foundation of the industry. As a honey producer and pollinator, you rely on the quality of

queens purchased.

Colony performance is influenced by; 1. queen quality, 2. your beekeeping management and expertise, and 3. the environment. Two of these three factors you can control and will be the subject explored in this series, with a focus on stock improvement.

Beekeepers at all levels are now taking an increasing and more serious interest in bee breeding in their search to find solutions to the challenges we face. Dramatic changes have occurred with the spread of parasitic mites and the consequential use of chemicals in colonies. Innovation and new approaches are needed to deal with these safely and effectively over the long term. Stock improvement is recognized as offering this opportunity.

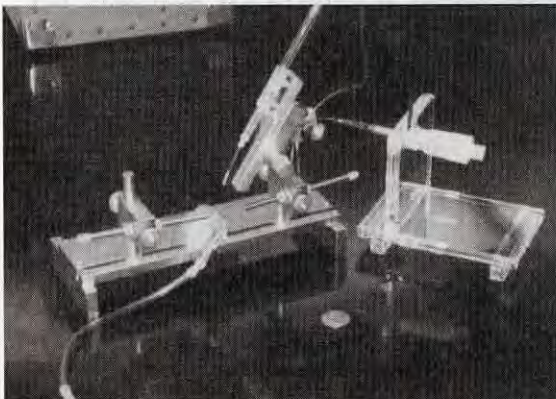
Queen rearing and bee breeding, terms once used interchangeably, are increasingly perceived as two very

different, though interdependent subjects. Queen rearing is simply the reproduction and propagation of stock. Bee breeding is the evaluation, selection and maintenance of specific genetic lines.

Most beekeepers rely on commercial queen producers to provide healthy, productive young queens every year. Beekeepers purchasing queens are becoming more demanding. Queens are expected to be productive, gentle, Winter hardy and also display traits that confer resistance to diseases and parasites. This is a tall order, though one that is possible and much needed. In future articles we will explore why our accomplishments in this area have been limited, the obstacles unique to bee breeding and how to overcome these.

The large scale production of high quality queens has become more difficult and more expensive. The increased stresses of parasitic mites and chemical usage effects colony health and reproduction. Only strong, healthy colonies can rear high quality queens and healthy mature drones in adequate numbers to ensure good matings.

Queen producers today must ad-



Queen breeders use careful selection, evaluation and maintenance techniques. Instrumental insemination is an integral part of this process.

dress the issue of also being bee breeders and find the resources to do this. The expectation is to obtain productive, well reared, well mated queens that have been selected for specific traits. This places increasing pressure on producers to evaluate their colonies or obtain reliable breeding stock. This is positive in that it will lead to stock improvement. But, beekeepers need to be realistic in their expectations and understand bee breeding is labor intensive, expensive and the results not always immediate.

The development of mite resistant stocks is a realistic goal. What once seemed illusive is now possible with the knowledge of new research findings and applied methodology. Research scientists exploring the biology and interaction of bees and mites are providing answers and techniques to select for resistant mechanisms in honey bees.

Several known mechanisms, such as hygienic behavior, grooming behavior and suppressed mite reproduction are heritable, common honey bee traits. Yet these specific traits occur at low frequencies in unselected European honey bee populations. To increase the gene frequency and the expression of these characteristics in bee populations requires a dedicated effort to selection, evaluation and controlled mating.

Too often the industry buzz feeds on the potential in advertising hype before the goal is achieved. This creates disappointment and discouragement. Breeding programs are labor intensive and expensive, and the benefits take time to be realized. This requires the practical application and adoption of scientific information and techniques in the field by the beekeeper. This transfer from researcher to beekeeper is not always smooth.

To be commercially viable, stocks that express specific traits that confer resistance must also be selected for a combination of more general traits that make them productive. This presents a conflict that must be balanced within a scientific bee breeding and stock maintenance program. This subject will be addressed in more detail in future articles.

As a queen breeder, you need to be in contact with the scientific com-

Queen rearing is simply the reproduction and propagation of stock.



munity and follow current research. As a queen customer you need to find out what your supplier is doing and what you can expect. Your demand of high quality, mite resistant queens will also encourage producers to provide this and not just talk about it! You must also show support for higher queen prices from the producers doing this work, and patience in the selection process as the complexities of this are worked out between the scientists and bee breeders.

Ask questions and test your queens. This lets your supplier know your concerns and what you expect. This will reward the bee breeders doing a good job and encourage the queen producers to take on the challenge.

In this effort, you must also understand the limitations and have realistic expectations. Realistic expectations means being aware that you are working with a living organism that is in a constant state of change and subject to environmental influences. (At least until more successful stock preservation techniques are developed).

Good communication with your queen producer will alert you to any temporary problems or setbacks that may occur due to unforeseen complications. Also, variable expression of specific traits in queens may be experienced as beekeepers explore this new territory. This can be a factor of several conditions and situations.

An example of this is selection for hygienic behavior in the New World Carniolan breeding project at Ohio State University. Initially selection for this behavior was variable by design. Selection for only this specific, recessive trait would have eliminated many productive breeders and limited the gene pool. This would compromise the integrity and

productivity of the established population. Therefore, a slower though more enduring and holistic strategy was chosen.

The goal is to increase the expression of this behavior in the entire population over time. To do this, a higher percentage of drones were taken from hygienic colonies for semen collection to inseminate all breeder queens. As a result progress was more variable, but the result more stable in future generations. We now have a large NWC sub-population displaying hygienic behavior that also exhibits the valued NWC traits.

Selection for a specific trait without consideration of general, economically important characteristics can produce unproductive stock that has little commercial worth. As we select honey bee stocks for specific traits that confer resistance, this must always be carefully balanced with selection for general performance. All breeding programs with a commercial interest must do this to be successful.

Gaining a better understanding of the basic principles of bee breeding and techniques of stock improvement is the focus of this series of articles. Your comments, questions and suggestions for future topics are welcome. In the mean time; question your queen suppliers, provide encouragement and support for their breeding efforts, and be patient. We are making progress, though bear in mind, this all takes time as we venture into this new era of beekeeping. **EC**

Sue Cobey is the Apiculture Technician at the Rothenbuhler Honey Bee Research Lab at the Ohio State, University, Columbus, OH. She is also the Administrator of the New World Carniolan stock of honey bees. You can reach her at Ohio State University, 1735 Neil Ave., Columbus, OH 43210, cobey.1@osu.edu

Honey In The Land Of Milk

A Beekeeper Thrives in the Hills of Brazil

Glenn Cheney

No matter where you are, marketing basics are important.

Renato Fonseca Oliveira was studying accounting at a university in Belo Horizonte, the capital of Minas Gerais, a mountainous dairy state in Brazil, when he discovered bees. At the time, he was also trying to run a flower shop. It was a lot of head-work, studying numbers and running a one-man business, but some people are like that, and Renato was certainly one of them.

This was back in 1982. Beekeeping was just beginning to become popular in Brazil. A state industry association, APIMG, offered a demonstration course for beginning beekeepers. As if he didn't have a enough to do, Renato took the course.

And that was the end of his career in accounting. Despite the vociferous remonstrations of his mother, who'd been looking forward to having a son with a nice job, Renato dropped out of school, returned to his native town of Santa Bárbara, bought three hives and declared himself in the bee business.

He learned the details. He processed his honey in his mother's kitchen. He worked without help. To sell his honey, he filled empty liquor bottles. He put the bottles in a bag and hitchhiked 25 miles down a dirt road and another 50 miles down asphalt to Belo Horizonte, where honey fetched a fair price — if the honey of killer bees can possibly be said to have a fair price.

Having sold his production, he "capitalized his revenues," which is an accounting term meaning "bought more hives."

Two years later, having expanded his business and left his mother's kitchen spotless, he earned a government award for Excellence in Rural Productivity. He sold his flower shop and bought a VW bus.

And more hives. Over the next few years, he won more prizes, including a magnificent trophy named Rosângela Maria Gonçalves, whom he married. He started packing his honey in plastic containers. He printed up labels that said, "Mel Santa Bárbara." He won a trip to a conference in Switzerland. Three times he won an award for Excellence in Commerce and Industry.

Don't underestimate the labor involved. By necessity, all beekeepers in Brazil work with Africanized bees, some more African than others. They're the only ones that can resist diseases, which in Brazil include *Varroa* and foulbrood. Renato uses no medications to protect his bees.

Except for ants and a rather scarce cousin of the skunk, wild pests don't mess with these bees. And the African bees work harder than the whimpy Italians, which are available but subject to rapid Africanization. The Africans go to work earlier in the morning, work harder all day, and work later into the evening.

The beekeepers have to work harder, too. Their suits are heavy

canvas that zip up tight and reach down over heavy rubber boots. Renato works in the hills of Minas Gerais, but still, it's Brazil, and the sun is hot.

Renato's company, Apiários Mackllani Ltda., has grown consistently from day one. Even today it expands by an awesome 80 percent per year. Today it's the largest supplier of bee-related products in Minas Gerais and one of the top five in Brazil.

Smart Marketing

Much of Renato's success is in the variety of his products, which may well exceed that of any similar company in North America. He currently offers over 90 different products, and his strategy is to offer something new every month. He sells honey, pollen, propolis, royal jelly, honey with royal jelly, honey with propolis, honey with propolis and eucalyptus, honey with propolis and extracts of any of a dozen herbs and spices that include ginger, mint, garlic, watercress, salvia, pomegranate, strawberry, lime, and Brazilian plants you've never heard of. He sells soaps, shampoos, cosmetics,



Cachaga sugar-cane hootch with honey.

salves, pomades, candles, perfumes, liqueurs and candies. He sells honey sticks and little packets that hold a tablespoon of honey mixed with the aforementioned extracts. He sells long chains of these packets. He sells medicinal sprays. He sells trinkets and statues and paperweights that glorify the bee. His factory and shop are the fanciest things in Santa Bárbara. Tourists in buses come to see where their honey comes from.

His sales reps roam over much of Brazil. They offer a nice, big wooden stand that holds all the Mackllani products. The retail price of straight honey is about two dollars a pound.

Of course he has a website: www.melsantabarbara.com.br.

As for those killer bees, those feisty fonts of all this honey, Renato affirms that they don't go flying around looking for something to kill. Sometimes they set up shop on a cliff or under the eaves of a church and hang there for a few months, gathering nectar till they've filled the available space, at which point, OK, maybe, sometimes, yes, they might get a little irritated with the noise of a festival and decide to chase off the faithful, but the faithful understand that God works in mysterious ways, and bees are one of them.

These really aren't bees for the backyard, Renato says. You keep them out in the woods. You can get near them, but not *real* near. When one of his workers, a metallurgist *manqué* named Regismarlon, takes me to one of several bee yards, he speaks in a hushed and respectful voice. We approach with caution, ready to run. We get a warning shot. One hits me behind the knee. It hurts. We get in the truck. We leave.

A Lethal Dose

It isn't every day somebody gets killed by these bees. It's a rare event. Renato can remember only a couple of recent cases. In one, someone captured a swarm and was taking it home in a nuc when for some reason he left it on the side of the road. He told a local farmer not to mess with it. Along came a highway worker on a tractor, mowing grass. When he hit the nuc, the bees exploded. The farmer told the worker to run. He did — faster than the farmer, may he rest in peace.

In another case, somebody had

a hive in their backyard. For some reason, the bees turned mean one day. They attacked the owner. He ran, tripped, hit his head on a rock and died. Technically, and mercifully, he died of a concussion, not stings, though he had a lethal dose of those, too.

That's about it for bee emergencies around Santa Bárbara. Besides that, the 150 beekeepers who supply Mackllani with honey have had no serious problems. Regismarlon says he rarely gets stung in the field, probably because he wears a no-nonsense suit.

Raising bees in Brazil isn't much different from in North America. The hives sit on steel monopod stands that have a basin of motor oil around the leg to keep the ants out. A plank of asbestos — a common roofing material — keeps the sun and rain off the hive. Though there's no winter to speak of, the bees are inactive from October to January, spring in Brazil, when rain and lack of blossoms keep the bees home. It's good to feed them then and to leave them stocks of honey to see them through temperatures that can plummet into the fifties. Mackllani's hives have odd feeders that hang down from the front door, plus a standard entrance feeder that's inserted in the side of the hive.

Africanized bees tend to swarm more often than Italians. That's both good and bad. It means you can easily lose a swarm, but you can just as easily capture one by poking a hole in a box and leaving it in the woods. A little wax inside helps. So does lemon grass. The best box is the special express mail box provided by the Brazilian post office. It's cheap and it's coated with something that makes it waterproof.

The process of harvesting propolis is interesting. Special supers have most of one side open, but a stack of slats of wood close most of it. As the bees try to close the gap with propolis, more slats are removed. As soon as the whole opening is covered with propolis, it can be chipped out without opening the hive.

A laboratory extracts the active ingredients of the propolis so that it can be mixed with alcohol for a medicinal spray. Another lab has promised Mackllani to develop an



José Renato Fonseca Oliveira

extraction process that uses only water.

Mackllani operates about a thousand hives, and beekeepers throughout the region sell their honey to the company. Three people do the uncapping, by hand, with forks. They have a single 32-frame extractor. The rest of the process is efficient, automated and clean. A decrystallizer heats the honey, sends it by pipe to a pasteurizer which sends it in a continuous flow to tanks that hold pure honey, honey with propolis or honey with pollen. From there the blends go on to be mixed with the various flavors.

Mackllani distributes the products to seven states, and retailers in other states order products by mail. In many areas, it's the only bee products available. Some of the competition produces more honey, but none offers such variety.

Mackllani is adding value to its products by promoting the concept of Santa Bárbara as *the land of good honey* — a convenient coincidence to Minas Gerais being Brazil's main dairy state. It's the land of milk and honey! Who cares if the bees are mean? **BC**

Glenn Cheney is a beekeeper and world traveler from Hanover, Connecticut.

SMALL FARM TRADE SHOW

Learn & Earn At The Same Time

Bob Harrison



The National Small Farm Trade Show & Conference is the largest annual small farm show in the United States. This year over 3,500 people and 150 exhibitors attended. There were 13 one-hour seminars, plus demonstrations, exhibitions, panels and association meetings all included in the low admission price. Each year attendance continues to grow as the small farm movement gains in popularity.

Myself and two other beekeepers sell honey at the show. All of us have been doing booths since the show's early days.

I was asked to report on parts of the show which might be of interest to *Bee Culture* readers. I believe one of the first things which sets the show apart from the big farm shows is all the small entrepreneurs which are involved in direct marketing of their products. If you are a hobby beekeeper or a sideline beekeeper you will get many ideas. The pace of the show is not hectic so a few minutes wait at most booths will let you talk to any of the 150 exhibitors.

Direct marketing (subject of many seminars) is the same with most products. Many label ideas and ideas on marketing not normally seen in bee magazines can be found. I am seeing more entrepreneurs


using exotic labels with logos. They say they believe the label sets their product apart from others on the shelf and worth the extra cost.

One of the seminars this year was "Kitchen Processing" by Earnie Bohner owner of Persimmon Hill Berry Farm, Lampe, MO. Many of the same rules apply for jams and jelly processing as for honey processing.

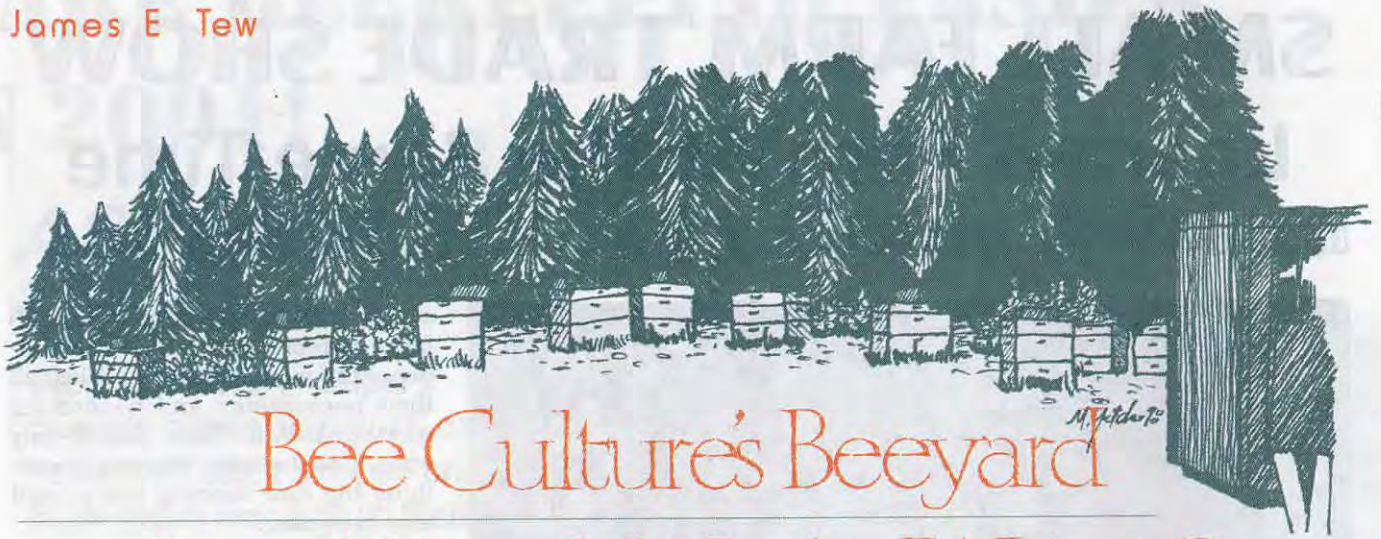
Earnie also keeps bees on his farm and sells the farm's honey at the show. Persimmon Hill also sells a Raspberry Summer Sauce which they make with their honey in the ingredients. Other products include a blackberry glaze, made by Persimmon Hill with the farm's honey, pollen and comb honey from the farm. Earnie's seminar also talked about ways of finding used restaurant equipment and using those for added value products. Persimmon Hill's booth is neat, attractive and labels do attract attention. Earnie and his wife quit their jobs and headed for the small farm life over 10 years ago. Times were not easy at the start but now they are busy most of the year and have added a mail order business. Earnie, his wife and children help with the business along with at least one part time employee. I always like to see when people are not afraid to quit a job they are not fond of and make a new life for them-

selves. Maybe many of the small farm entrepreneurs are of the caliber of the pioneers which packed all their possessions and headed for parts unknown. These people only want a sustainable lifestyle. Something big time farming has a hard time providing.

Many government agencies are represented with free information on government loans and programs which might be of interest to beekeepers. Patrick Beyers, fruit grower adviser at Southwest Missouri state, spent the weekend talking to growers about pollination and had a list of beekeepers doing pollination. Pat has been a hobby beekeeper for a number of years and has considerable beekeeping knowledge.

My wife, Elizabeth and I also do a booth at the show and I have done a seminar on beekeeping at the shows many times. We run Busy Bee Acres, Inc. in Odessa, MO. I have kept bees since I was a teenager in rural Florida and bees were my project in Future Farmers of America. I spend the weekend telling people about getting started in beekeeping, passing out information, and helping other beekeepers with problems they are having with their bees. About the only item not sold from our booth is beekeeping equipment. Busy Bee Acres sold four varieties of honey, comb honey, chunk honey, beeswax ornaments, candles, cookbooks, pollen and gift packages at the show. Many years we have had the Missouri Honey queen at our booth on Saturday. Busy Bee Acres does three events a week from April through October and several large outdoor events. The event I enjoy the most and look forward to is the Small Farm Show. If you are planning on attending next year and would like a schedule of events or wish to register over the phone call 800.633.2535. 

Bob Harrison is a commercial beekeeper from Odessa, Missouri.



Bee Culture's Beeyard

Spring's Here...So Why Am I Whining?

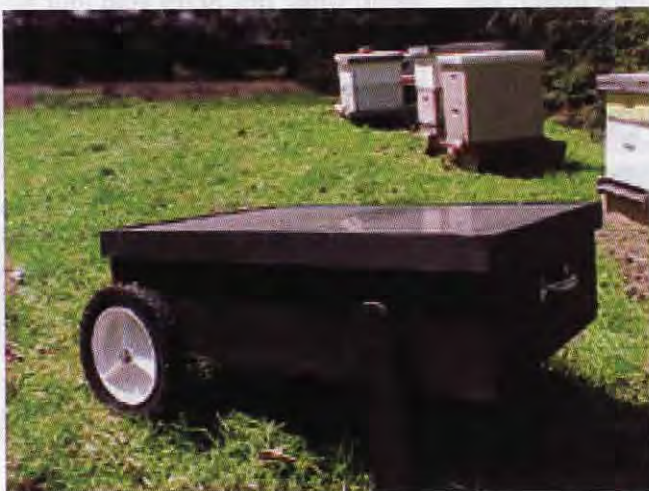
I have always committed these pieces to being tales of truthful beehive and bee yard experiences – no matter how good or bad. As the series has grown, I have found that I continually struggle to bring you BCBY (Bee Culture's Bee Yard) updates without constantly crying about time shortages, cold weather, wet weather, diseases (bees or my own), or my own shortcomings, but I can't ignore the fact that most of the time, things just don't go as planned. Not so much with the hives, for they are remarkably dependable, but rather with my personal schedule.

As I presently write for you, it is mid-April, 2001. I have already mowed my lawn twice. Early flowers, including Maple, are in bloom. I have allocated the better part of this entire week to working my bees and getting things operational for the spring and summer of 2001. Now, it's snowing. That's right – it's snowing on a lawn that I have already mowed twice. So I am forced to make the observation that it is not *time* that is short – but that *appropriate time* is short. *Appropriate time* is my term used to describe usable time needed to do necessary jobs. Right now, I have allocated several days to do the yard work but the weather is uncooperative. So I have

time, but it's not at the right time. No doubt, next week will be great, but I will be off to other responsibilities. I suspect you readers will wonder why I can't get things done. My answer is, "I don't have enough *appropriate time*." Do you?

Reviewing My Yard Philosophy

My beeyard philosophy may or may not be yours. Some of you may recall that I began this project to return to my early roots in beekeeping. I wanted to relive the energy and enthusiasm I had for beehives in my earlier years. I wanted to keep bees because I wanted to and not because I had to. I reminded myself of that philosophy this morning as I fretted about the weather. I admonished myself to go with what worked rather than forcing my work schedule on the yard. I had planned to paint the remaining equipment, check brood nests, remove the dead-outs, and clear bottom boards. None of that can happen this week. I asked, "What can happen that I would enjoy doing?" A couple of things came to mind.



A solar wax melter on wheels.



A garden bench for the beeyard.

A modern pollen trap with the drawer open.



A Solar Wax Melter

I have always planned to put down a paver-brick pad on which to sit a solar wax melter in my yard. Thanks to the weather changing my schedule, that can be done now, and it will be a notable asset to the BC yard. **Drat.** I will need to kill the grass underneath the pad and probably mulch around the pad in order to mow around it throughout the summer. Neatness counts. Rather than do all that, I wish I could easily move the melter for mowing and for sun angling. I realized I wanted my solar wax melter to be equipped with wheels. Though I never seen a wheeled wax melter, how hard could it be?

Though building a solar wax melter is possible, I chose to simply buy one from the bee supply companies. It came essentially assembled. I mounted two 10" wheels underneath the front of the melter. I attached the axle with two 1/2" tube straps and put a handle on the upper edge. Due to the increased height of the melter caused by the addition of the wheels, I replaced the two factory legs with longer legs that I cut from treated lumber and attached each of them with a couple of screws. It was a simple modification. I have included a photo of the *Mobile Melter*. What do you think? Does it need brakes, taillights, and a license plate?

Operating a Solar Wax melter

Solar wax melters operate on the same principle as a greenhouse. The power needed to operate the melter – sunlight – is free, but not without a cost of sorts. That cost is that the solar wax melter is inefficient. It can leave as much as 1/3 – 2/3s of the wax un-rendered in the slumgum. But the convenience of walking over to the solar melter and dropping in my hive scrapings cannot be ignored. It keeps the yard clean and I don't have to haul the sticky stuff back home.

The box should be black on the outside and painted white inside. Though single panes are more common, the ideal melter should have two panes of glass in the cover and that glass cover should be no more than five inches from the surface of the wax to be melted. The bottom of the melter is slanted to allow for the melted

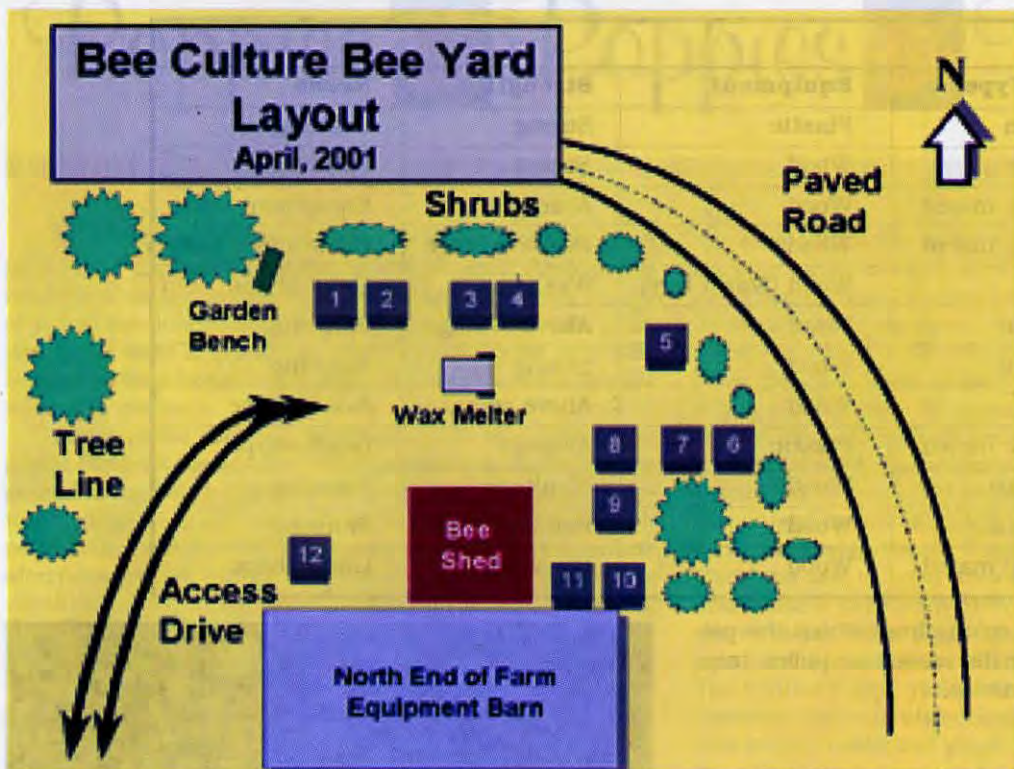
wax to flow into a catch-pan. A common occurrence is for the sun-bleached wax to overflow the catch pan and make a mess within the melter. It happens. It's hard to estimate how much wax to put in and how hot the day will be. Beekeepers frequently place another pan underneath the catch-pan in anticipation of the overflow days. To operate as efficiently as possible, the glass should face the sun. I have seen solar melters mounted on a post so the melter can be rotated. However, since I am usually a solitary beekeeper, I want to be able to put the device away during winter months, move it around the yard as I mow the grass, or to reposition it for the best sun angle as the surrounding trees leaf out. (In fact, the older I grow the better I like wheels, motors, and ramps on all my bee stuff.)

A Yard Bench

Secondly, I want a garden bench in the yard. Those of you over 45 years of age will understand why. I could build one, but I didn't require anything fancy so I checked into buying one. I bought a cast iron bench having a wooden seat with a cast iron and wood back. It seems to be a well-made bench. It cost me about \$70 at Lowe's. Due to the water-soaked ground, I can't put down a mulch layer on which to set the bench just yet. I will add that to my list of future jobs.

More About Hive Stands (Quickly)

Last month, I complained to you that skunks were harassing my colonies and that I was considering raising my hive stands higher off the ground. I've decided not to do that. So, the hive stand design that I am presently using is finished (until further notice). Why? If I raise the stand, no doubt I will incur new problems with legs sinking into the ground and top heavy hives. Yes, I know those problems could be addressed, but at least I know what the problems are with skunks. I think I will stay with the known problems rather than incurring new ones. (But I reserve the privilege of changing my mind if the skunks proliferate.)



Yard Layout for the 2001 season.

Packages and Queens

I ordered a couple of packages from Reggie Wilbanks at Wilbanks Apiaries. (That's not an endorsement, just information.) Since I have established colonies underway, I can use the packages, along with brood frames from other colonies, to subsidize the packages once they arrive and are installed. I have requested that the packages be shipped in a couple of weeks. I will keep the new beekeepers among you apprised of their arrival and installation.

I've also ordered a few specialty queens. I have not requeened any of my hives since I installed the bees a couple of years ago and I am hoping to bring the queen stock up to date this season. In the meantime, I expect some swarming this season. Some of you have asked that we install various kinds of queens that are currently advertised. I, too, would like to do that but I need to say plainly that my observations will not constitute a scientific evaluation but will be casual observations. On my list of intended queens will be some of the touted Russian queens. Several of you have asked that I look at these new queens.

Pollen Trapping

In previous articles¹ I discussed feeding bees supplemental sugar. Presently, I can't say that I am aware of a great pollen substitute available to beekeepers, but feeding wintering colonies a good pollen substitute is a good idea. I would like to trap some pollen for use next winter for supplemental feeding.

Pollen Trap Particulars

Pollen traps essentially all operate the same way.

¹ Tew, James E. 2001. Feeding sugar fondant to winter colonies. *Bee Culture*. 129 (4). Pp 44-45

Returning pollen foragers are forced to squeeze through a grid made up of hardware cloth (1/5" squares). This odd size hardware cloth will require you to purchase the cloth from bee supply companies or from specialty suppliers. Usually two grids, placed about 1/4" apart are used. The two grids are slightly offset in order to force the foragers to contort through the first level, then angle themselves and contort through yet a second layer of cloth. Pollen loads are dislodged from the bees' hindmost legs and drop through a 1/8" hardware cloth that makes up the floor of the pollen trap. Were it not for this protective screen floor, house bees would retrieve the dislodged pollen pellets.

In most traps, the dual trapping grid can be removed to allow the colony time to collect pollen for its own use. Depending on the season, a couple of days on and a couple of days off seem to work out pretty well.

Drones and Pollen Traps

A problem with all pollen traps is how to route drones that are attempting to exit and return to the hive. Normally, small cone devices allow the drones to exit but they will not be able to return to the hive. The same would apply to queens attempting to leave and return to the colony.

Effects of Pollen Trapping on the Individual Colony

Does pollen trapping negatively affect the colony? Yes, it does. Then why do it? Overall, all the colonies in the yard profit from the pollen supplement that you can make using the collected pollen. Essentially, colony growth could be so great that you can pump up all the colonies in the yard, remove some of the brood from these increased colonies and give it back to the weakened colony from which the pollen was originally trapped. It is as though you are borrowing the pollen and brood from the trapped colony. There's no other way to gather

Colony Description				
Colony #	Queen Type	Equipment	Strength	Needs
1	Cordovaan	Plastic	Strong	Painting
2	Cordovaan	Wood	Strong	Painting
3	Naturally mated	Wood	Average	Equipment repair
4	Naturally mated	Wood	Below average	Paint and repair
5	Italian	Wood (Warm way)	Weak	Good shape
6	Carniolan	Wood	Above average	Painting
7	Carniolan	Wood	Strong	Painting
8	Italian	Wood	Above average	Good shape
9	Naturally mated	Plastic	Average	Good shape
10	Caucasian	Wood	Weak	Painting
11	Caucasian	Wood	Below average	Painting
12	Naturally mated	Wood	Below average	Good shape

pollen without affecting the colony from which the pollen is taken. I will have more discussion on pollen trapping results in upcoming articles.

The Yard Layout for 2001

I'm presently running 12-13 colonies in the BC yard. Two are particularly weak. I went into winter with 16 colonies so I had about 23-25% winter losses – not good but not bad. I really don't want many more than 10 colonies; otherwise, it becomes too much work. Plus I suspect I will pick up a couple of swarms, so I still have more than I really want. All my colonies are in double deeps in either standard equipment or plastic equipment. Last year I had a couple of nucs in the yard, but I don't have any this season. I plan to restock the garden hive just to tinker with it again. As I mentioned above, I have included a portable solar wax melter and a garden bench for apicultural reflections.

I estimate that I have three strong colonies, two above average, two average, three below average, and two weak colonies. My assessments are strictly arbitrary and based on "gut feelings." There are some obvious colonies needed to be requeened and clearly I have equipment that needs painting and maintaining. As always, I have good intentions.

Overwintered Nucleus Project Update

Of the forty 4-frame nucs that I attempted to overwinter, about 12 are still alive right now. I expect two more to die due to the late cold snap that is presently occurring. You may recall that I bunched 4-frame nucs into 4 categories: singles, duplexes, duplexes on top of colonies but separated by a screened inner cover, and groups of five 4-frame nucs sheltered by a blue Styrofoam® outer covering. It is the last group that is surviving best. I did not want to build special equipment, such as 4-frame supers, to assist the small colonies. This overwintering procedure needs to be very simple. Clearly, four frames are not enough for nucleus colonies to routinely survive an average winter in Ohio. Possibly five frames would be enough. Next winter, I plan to go with five frame duplex nucleus colonies that



Part of the Bee Culture beeyard, Spring 2001.

are shielded by Styrofoam® and compare those with 5-frame colonies in single deeps. Essentially, the major change I am making is to increase one frame (from a 4-frame nucleus colony to a 5-frame nucleus colony and to use deep hive bodies (They can hold more honey.) as single colonies. In warmer climates, I suspect that 4-frame nucleus hives could survive the winter quite well. I will keep you informed in future articles.

Confessional

I struggle to keep myself productively busy during winter months. During winter months, I do as I tell you to do: I read, I build, I repair, and I plan, but I don't work bees and I miss that. It's now spring so I mow grass, I paint, I repair, and I plan, and I occasionally work my colonies, but really I am looking forward to the season. This is the year that I plan to have no swarming, no diseases, no stings, and get the biggest honey crop ever. Yep, this is going to be a good year Yeah right. Think like a beekeeper. ☐

Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684, Tew.1@osu.edu

Poppies Poppies Poppies

Richard Dalby

An individual poppy blossom is a thing of beauty. A field full of poppies all abloom in the sunlight, their petals bright and satiny, is a sight not soon forgotten. As a source of pollen for honey bees, the various species for this plant can be of local importance. Bees appear to be in pollen heaven as they forage in the poppy blossom's characteristic whorls of stamens.

Poppy is the common term applied to members of the genus *Papaver*, though the term sometimes designates other genera in the Poppy Family (*Papaveraceae*). This family contains some 25 genera and 200 species whose sap is typically milky or colored. Other family characteristics include alternate leaves, showy flowers of large size with shiny wrinkled petals, and abundant stamens arranged in whorls. The flowers are radially symmetrical with 4 to 12 distinct petals.

The genus *Papaver* is composed of about 50 species found in temperate and subtropical areas of the Northern Hemisphere. Some are annuals, some biennials, and some perennials. They all love the sun. Most are easy to grow from seed in the average garden.

Let's take a closer look at some of the most popular poppies. The Oriental Poppy (*Papaver orientale*) should probably head the list. This home garden favorite grows to 3 or more feet in height, with large, hairy, coarsely cut leaves. Its huge, open blossoms attract pollen-seeking bees, which fairly revel in the abundant supply of pollen. Native to southwestern Asia, the Oriental Poppy brightens gardens across America when it blooms in late spring or early summer. Its huge orange-red blossoms make a beautiful sight. Other varieties of this species sport salmon, pink, or alabaster petals, usually with a dark blotch at the base. As with most poppies, the blossoms of the Oriental Poppy last but briefly, though the bees make the most of this pollen feast while it lasts.

Another perennial species is the Moroccan Poppy (*P. atlanticum*); whose pink blossoms are borne on stems 10 to 12 inches high. The Iceland Poppy (*P. nudicaule*) is a short-lived perennial with thin hairy stems, which support showy blossoms of orange, yellow, or white. Despite its name, the Iceland Poppy actually hails from Siberia, and does well in cooler climates, often blooming the first year from seed. The Alpine Poppy (*P. alpinum*) is a low-growing perennial species native to the Alps with grayish foliage, finely cut, and delicate white or yellow blossoms with an appealing scent.

The corn Poppy (*P. rhoeas*) is also known as the Field Poppy or Flanders Poppy. This flower, blooming in the fields around the cemeteries of the Flanders region of Belgium and France where rest thousands of Allied soldiers on World War I, inspired Canadian poet John McCrae (1872-1918) to write his famous poem, "In Flanders Fields". ("In Flanders fields the poppies blow/Between the crosses, row on row...") Fittingly, the Corn Poppy has become a symbol to honor dead soldiers on Memorial Day here, Remembrance Day in Canada, and Poppy Day in Britain.

An annual herb, the Corn Poppy reaches 20" to 2-1/2 feet in height, with erect, hairy stems bearing scarlet flowers from June to October. It has seen medicinal use as an analgesic and a sedative, the plant containing a mild seda-


tive alkaloid known as rhoeadine. The seeds of this poppy are popular for use in baked goods.

Though illegal to grow in this country, mention should be made here of the Opium Poppy (*P. somniferum*). Native to Greece and the Orient, this large poppy may reach four feet in height. Its flowers range in color from white to lavender, red to purple, pink to maroon. As a medicinal plant, the Opium Poppy is without peer. It was one of the first plants to be cultivated. Its medicinal use goes back at least to the Sumerians, some 5,000 years ago. The Greeks and the Romans used opium as a sedative and a soporific, and its use spread to Arabia, Persia, India, China, Europe, and America. Morphine was isolated from the Opium Poppy in 1803, the first alkaloid to be derived from a plant. In the ensuing fifty years, many other plant alkaloids such as quinine, atropine, and cocaine were isolated and put to medicinal use. The Opium Poppy yields over 25 alkaloids, including papaverine and narcotine. Unfortunately, the derivatives of this stellar medicinal plant have long been misused and are as a consequence, at least in this country, tightly controlled.

Prickly Poppy (*Argemone mexicana*) is also known as Mexican Poppy, thorn Poppy, Yellow Prickly Poppy, and Yellow Thistle. This poppy is a good source of pollen. The plant's leaves and seedpods are armed with sharp spines, as is the stem. This seems appropriate since the plant contains some toxic substances. Native to tropical America, Prickly Poppy turns up as far north as the New England states. It is an annual, which grows to 3 feet or more in height. The stalkless thistlelike leaves may be blotched with white. Yellow or orange flowers, 2 to 3 inches across, appear from June to September, giving rise to the prickly seedpods.

The famous California Poppy is another member of the Poppy Family or *Papaveraceae*. California Poppy (*Eschscholzia californica*) is an upright annual native to California and the southwestern states. Growing to a height of 12 to 18 inches with finely divided foliage; the plant is very drought resistant and does well in arid locations. The flowers range from brilliant orange to pale cream with shiny, fan-shaped petals to 2 inches long. The blossoms close at sunset or on overcast days. The plants bloom profusely throughout the summer. They prefer full sunlight and form patches or extensive fields. California Poppy is particularly abundant on low hills, and seldom occurs naturally in California above 2,500 feet elevation. It has been widely planted as an ornamental in parts of the world in temperate climates.

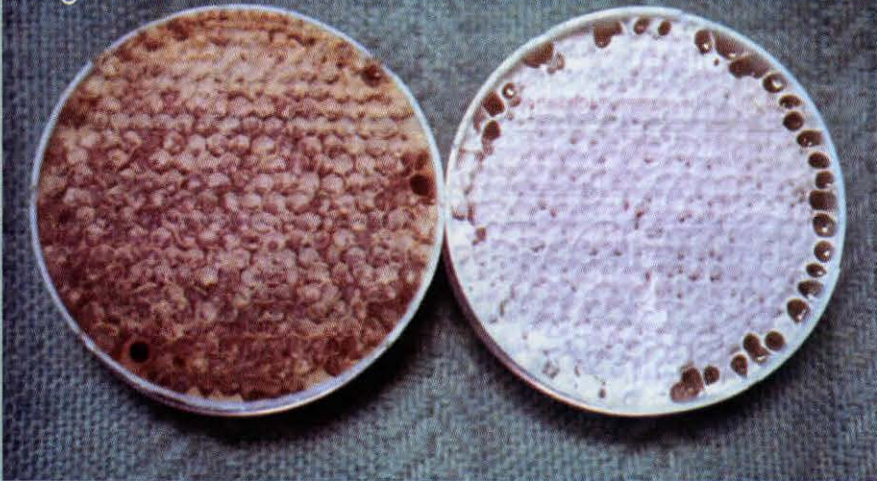
In 1890, the California Poppy was chosen as California's state flower. The early Spanish inhabitants of the future state called the plant by the name *copa de oro* (cup of gold), a particularly apt description. The Indians reportedly boiled or roasted the foliage as food.

It should be mentioned that all the poppies produce abundant seeds and are, in the main, easy to grow. Most are widely available from local or mail order sources. If you plant a patch of poppies, both you and your bees should be pleased with the results. 

Richard Dalby is a hobby beekeeper from Levan, UT.

PERFECT ROUNDS

Roger Morse



Here are two round comb honey sections produced at the same time on the 1998 orange blossom honey flow in Florida by two colonies two feet apart. Why do they appear so different?

The section on the right was made by bees in an approximately five pound swarm that was hived in a 6-5/8-inch deep super with new plastic foundation. The round section super was placed above the modified half depth super. The bees in this swarm capped the cells so as to leave a space between the honey and the cappings and thus the section's white appearance. Equally important, these bees had no old comb in their hive. A five pound swarm does not make a very powerful colony and to force the bees to work in the small sections it was necessary to hive them in a shallow super rather than in a super of full depth combs.

The section on the left has

two faults. The bees in this colony built the cappings against the honey thus giving the section surface a "watery" appearance. Also, this comb honey super was placed above a full depth super of old combs with brood and the bees used a small amount of the old wax to cap the cells, thus the darker appearance of the section's surface.

About 100 years ago, when most beekeepers produced only comb honey, they selected queens whose worker bees built cappings above the honey, not adjacent to it, as they felt it gave the sections a better physical appearance. These two ways of capping honey illustrate another behavioral trait found in different races of honey bees.

This article was on file when Roger passed away last year. We bring it out now as a timely reminder.

MITES OF THE HONEY BEE

Edited by Thomas C. Webster
Keith S. Delaplane

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Publication

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A Weed Is A Weed Is A Weed, Or Is It?

Ann Harman

Is a dandelion a weed? It all depends on who you ask.

"What is a weed? A plant whose virtues have not yet been discovered." Well, Ralph Waldo Emerson was certainly correct if he was referring to human beings, but you can be sure that honey bees discovered the virtues of weeds a long time ago.

What do we as gardeners consider weeds? If we read the ads and listen to the radio or watch TV we will find that we have been well-doctrinated into eliminating "weeds." We are informed about "pesky dandelions" and are reassured that our grass seed is "free of unwanted weed seeds" which seems to include White Dutch Clover. If our honey bees were listening to all this we might have a revolt on our hands. Bees view dandelions as a pretty good early Spring pollen source—the better to raise brood with. And beekeepers admire the persistent bloom of clover as a delicious, marketable-honey source.

The designation "weed" is actually stuck onto a number of names of rather pleasant flowers that can be identified in books for wildflowers. Does that designation somehow reduce their dignity? It certainly does not reduce their appeal to bees and beekeepers. How about Joe Pye Weed—did anyone ask Joe Pye if he minded "weed" being tacked onto his name? The beautiful Fireweed of the west brings delight not only to bees but to the bee-

keepers who consider Fireweed honey to be a fine specialty crop.

How about a gorgeous rose growing in the middle of a tomato patch? Although we can admire both, it would be easy for a tomato grower to label the rose a weed – a plant out of its place. City dwellers fre-



quently stick a tomato plant into their flower beds which are carefully edged with parsley. Weeds? Out of place? Not at all.

Scraggly, "weedy" fence rows used to be commonplace in rural areas. Here was an ideal spot for seeds to germinate and grow, whether tree, perennial, or annual, shrub or vine. Interspersed in this tangle was a good assortment of bee forage. In addition, the fence rows

provided a haven for small mammals and many birds. These creatures probably benefited from bee pollination for nuts and berries as much as the beekeeper benefited from the pollen and nectar produced there. Now the weeds are mowed, cleaned up. Shaggy fence rows have joined the dandelion-free lawn. The bees have to go elsewhere. So do the birds.

In some parts of the U.S. there is renewed interest in native plants—those plants indigenous to this country. As we view the landscape, both cultivated and wild, in our area today it may be difficult to imagine what it would be like without all of the plant introductions we have had over the centuries. Yes, centuries, because many settlers, either in a fit of nostalgia or inadvertently, brought plants with them. Plants have arrived unannounced with the soil used for ship's ballast. Some plants have been brought in

deliberately because they are productive and now part of our food supply, others because they are beautiful. Some of these introductions are innocuous, others disastrous. We love beds of colorful early spring tulips but we swear at kudzu. Multiflora rose has gobbled up cow pasture space but is still being sold as a "living fence."

In many areas the desired habitat for a native plant has been

Continued on Next Page

turned into asphalt and concrete. Here both man and bees are the losers. In other places the conditions for growing have changed, but not all due to man's intervention. Wetlands form, floods take their toll and volcanoes rearrange an area. Appropriate plant life follows various natural disasters, and the bees are ready to take advantage of new-found riches.

Native plants do provide bees (an introduced critter) with a wonderful assortment of both pollen- and nectar-producing flowers. Bees thrive best on a collection of pollen from varied sources—each type providing differing amounts vitamins and minerals. The assortment adds up to a complete diet of vitamins and minerals. Bees, however, are not as particular as we are about the flavors of honey. Strong, bitter, peppery are words that are not in the bees' vocabulary.

But what happens when an introduced plant finds growing conditions ideal and few or no natural enemies? An explosion of growth, turning into a monoculture in some cases. Look at purple loosestrife and yellow star thistle. The bees like them. The beekeeper likes them. But warnings are everywhere that these plants are invading wetlands, carpeting areas with beautiful purple blooms (loosestrife) and covering too many acres at the expense of other plants (thistle). Brazilian pepper has reproduced itself well enough to give the Florida beekeepers an income from its honey. Ailanthus – the Tree-of-Heaven – may give pleasure to the bees but the honey is just not heavenly. This tree marches along fence lines and carpets roadsides. These plants, and similar ones, defy any efforts of eradication.

Just what is wrong with a monoculture? Well, that depends on your point of view. You're hungry and want a peanut butter sandwich and you do not wish it to be as costly as a fine steak. The monoculture of wheat – the midwest grain farmer's pride – brought you the slices of bread very cheaply. The peanut farmer's fields gave you the peanut butter. If these two plants were not monocultures but had to be harvested from a muddle of other plants that sandwich could well be as costly

as a fine steak.

The vast fields of clover and alfalfa are enjoyed both by the honey producer and the grower. Definitely monocultures! Yet useful and profitable to many.

But what happens as an invasive plant takes over a territory. The native plants are slowly crowded out, leaving a monoculture that may not be nearly as desirable as the natives. Those native plants produced a sequence of bloom from spring until autumn. The invasive plant may have only a short period of bloom. Or it may only be a pollen source for the bees, and a nutritionally deficient pollen at that. Or it may be totally useless for honey bees. In this situation a monoculture gives no dividends. The millions of acres swallowed up by kudzu were once beneficial to honey bees with a variety of crops and wildflowers.

Some states have designated certain weeds as noxious or prohibited. However when a beekeeper examines the list, some honey plants seem to be on it. Beekeepers object because there goes a good honey source. But perhaps we should ask the farmer about those plants. Are they interfering with crop or pasture? You are the one who will be eating the slice of bread or the roast beef. Are those noxious plants taking the place of something else that would actually benefit bees and beekeepers, as well as the farmer? Are those noxious plants invading the space of an assortment of beneficial honey plants? Consider carefully all aspects before you set up a howl.

By the way, have you ever handled a bale of hay with a nicely dried and baled large thistle plant in it? Do try it sometime. After you remove the prickles from your fingers, go back and review your state's noxious weed schedule.


Many beekeepers have the great urge "to plant something for the bees." Often times seeds will be ordered with total disregard for soil conditions, area to be planted or desirability of plant. Certainly go ahead and plant some nice flowers in a bed by your house. This will give you an opportunity to watch the bees fly from flower to flower and to pack pollen into their baskets. Let those dandelions grow in the grass alongside the white Dutch Clover. But for honey harvest, start with the need

for two million flowers per pound and be realistic about what you can do for a honey harvest. You can easily investigate your soil conditions and growing weather with a visit to your county extension office. Then start investigating whether or not the plants you have chosen for widespread planting are really desirable. Or will your area's selection of wildflowers or farmer's crops give you your best harvest:

It is true that a plant can be enthusiastic and invasive in one climate in the U.S. but perfectly well-behaved in another. It does me no good to complain bitterly about whacking honeysuckle vines off my pasture fences to someone who can't grow the stuff at all. That person has something else to grumble about which makes no sense to me. So investigate your area growing conditions before you plant.

Suburban beekeepers face a problem rural beekeepers do not. In a housing development of carefully tended green-carpet lawns the beekeeper who allows (horror of horrors) dandelions to flourish and go to seed will soon find pressure from neighbors to eliminate those "weeds" from the lawn. It may be possible to purchase their pardon with a few jars of honey and a plea for good bee nutrition. But some suburban beekeepers may have to give in to the modern way of thinking—eliminate weeds and that means dandelions in the lawn.

Books about plants for beekeepers are almost non-existent. We have to make do with a few old out-of-print ones (including a reprint) and a number of articles in beekeeping journals. Some information is given in beekeeping books but it is difficult to give a good picture of honey and pollen plants for the entire U.S. We can refer to wildflower identification manuals but these do not provide any information about usefulness to bees and beekeepers. Some of them do not even consider invasiveness. So it is really up to us to keep reading and keep gathering information wherever we can to make our own manuals of bee plants suitable for our own areas.

So – what is a weed? It all depends on your point of view. 

Ann Harman is a sideline beekeeper and international marketing consultant.

I Am A Beekeeper's Wife

THE GOPHER

Amanda Whitney

Our job description is simple . . . do whatever the boss does not want to do.

It is 90° in the shade on an August afternoon and the air is dead. I am surrounded by the hum of a million honey bees coming and going from their hives, and the thick sweet smell of honey in the heat fills the air. Like an ancient cave dweller praying to the fire god, I crouch down in the shade of the pickup truck armed with my materials for sacrifice; the smoker, a hive tool, an assortment of dried grasses and loops of baler twine and a box of matches. The smoker is a beekeeper's friend they say, nevertheless, I approach it with distrust and expect nothing but a stubborn refusal to cooperate.

The first step to light it is to discard the remnants of the last sacrifice, the powdered ashes of hay and leaves, and carefully place the new fodder in the cylinder, holding a lit match beneath. The idea is to catch the tuft of grass on fire, then, puffing gently feed it more tinder until there's a healthy blaze cooking. Then you wad the baler twine in, which creates a smoldering burn without flame; therefore the smoke you puff on the bees is cool. This is the way it is supposed to work. But, let me tell you, it never does.

When all the prepared tinder is consumed and I am scraping up dried lawn clippings by the fistful, I begin to feel tired and irritable. I know, after all, this is how the scenario goes, but that does not stop me from feeling defeated. Finally, when the box of matches is nearly gone and sweat and tears are rolling off my cheeks, a feeling of grateful reverence and calm fills my soul at the resulting flame and smoke that finally fumes from the metal altar.

By now of course, the beekeeper, which happens to be my

husband, and who has been waiting for the smoker, is hot, annoyed and impatient. With no small amount of pride and satisfaction, I carry it to him. I have fulfilled my sacred duty, taught me long ago with ceremony and skill. It is my job to light the smoker, one that any self-respecting gopher takes seriously. I am a beekeeper's wife, the Gopher.

When I married my husband, I knew I would cook and clean and bear children, the task of all my ancestors and pretty much the standard marriage package. I am okay with that. I required no contract or job description. But it is an unexpected addition to the list that has taken time to adjust to.

I knew before I married my husband that he had had some torrid affair with beekeeping in his youth that had taken him to the great Florida orange grove migrations and the pink and white bloom of New York State's apple orchards. I was also vaguely aware that his grandfather, a Vermont native, had kept bees all his life, and so had his great-grandfather before him. At that time, my ignorance was so great so as not to be suspicious with this information and I had smiled and said, "That's nice, dear."

What I did not know at that juncture is that beekeeping is in the blood, and once your genes are created, there is no going back. Our wedding rings had hardly lost their shine when a mysterious fever overcame my new husband and I began to hear talk of honey bees. Initially, I felt this was a simply a surge of nostalgia. However, the fun and frolic of that past affair had made such an impression on him that I noticed he was beginning to act

strangely.

What started out as a small, inconspicuous collection of beekeeping books and paraphernalia on his nightstand began to grow like a fungus. A nice picture of me by a lake that had formerly sat prominently near the alarm clock was put into the drawer as the book stack climbed. Like distant relatives you've no wish to see, bizarre tools appeared and ended up staying with us - an ancient hive tool, a beat-up, burned-out smoker and a small white box lettered "queen marking kit" took up residence in my refrigerator door.

Finally, the fever took hold with strength, and Mark proposed a trip to New York State scarcely a year after we had been married. In the spring, we made plans to meet the pollination crew and rendezvous with his old beekeeping mentor to obtain six hives of bees. This seemingly simple operation was planned and executed quickly, but would actually require a military-like skill to deploy. (That, however, is another story altogether.)

That was only the start of our various trips for beekeeping equipment that would take us from New York to Florida. (How we ever managed to cram a 12-frame extractor into the back seat of our Pontiac Grand Am on the way home from Florida is still a mystery.) Yet I was a willing passenger on these expeditions, and listened with patient respect to the lectures on bee culture. I learned that the queen bee will hardly ever sting, and even permitted an actual experiment by letting the royal insect wander around on my hands. I was taught how sacred and noble her life, how intelligent and savvy she acted. Only the

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"But now I feel the satisfaction of a good honey crop, and the anguish of a dying colony."

elite drones won the privilege of her affections, which they paid for with their life. How fascinating.

Now, with six hives in our charge, we weekly went to the "bee yard" to inspect the operation. Still ignorant of many of the intricacies of beekeeping, and confident that this old love affair would diminish with time, I accompanied Mark to the bee yard and watched from a distance. I eventually plucked up my courage to approach, with caution, the open hives and peer inside their worlds. Then, without my noticing, somewhere along the way I became the Gopher. My life has never been the same.

Here is where the smoker comes in. I learned, in addition to bee culture, that every beekeeper should have a Gopher. Our job description is forthright and uncomplicated: it is our job to do whatever the boss does not want to do. This entails lighting the smoker, running to the house for the third box of matches when there is trouble lighting the smoker, stacking empty boxes and hive covers, scraping the inner covers to remove wax, and the all-purpose (and my personal favorite), "Hold this – and *don't* drop it!"

I have to say that although I felt a mild degree of interest in Mark's passion, I was not overly enthusiastic. Then, on a warm fall day, we made plans to gather the fruits of our (and the honey bees') labor. It was time to extract honey. How exciting, I thought. What fun.

Being that Mark had just begun his beekeeping operation this year, he was not as well equipped as he would have liked. There was a retired beekeeper in our town that was willing to part with his hundreds of boxes of junk, uh, bee stuff, for about half the price of a new home. This is a necessary expense, I learned, and we acquired a mass of treasure – ancient beekeeping boxes and tools, books, magazines and things I could not even identify. Amazingly enough, some of these items actually did come in handy over the course of time. But the most useful thing we still did not own: a honey house. A honey house, you must understand is not just a building or barn, but a large, windowless room that can be sealed. Sealed? One may wonder

whatever for? Yes, that is how new at this I was.

The only place we had at our disposal to substitute for a honey house was a barn. It had a large, long table way in the back, but also had many windows and a huge double-door that did not close tight. Nonetheless, we pressed on.

Honey bees can smell and locate honey a mile from their hive. It is easier and cheaper for honey bees to gather honey rather than nectar, because nectar requires processing in order to make it into honey. If bees can get away with robbing a weak colony, they will do so in all haste. While the stealing goes on, there is a Mafia-like atmosphere. They seem to know that they are thugs, and this knowledge transforms them into small, stinging, bad-tempered missiles zinging through the air.

Well, our bees were kept a good half mile from the barn, and it was late in the afternoon – perhaps we would not see too many, we optimistically agreed. How bad could it be?

It did not take long to discover how bad it can get when given the chance. Two dozen supers were stacked in the barn, all still sealed and waiting to be extracted. We were not long into our operation before we had a lovely golden river flowing into our pails. Bees share our sentiments exactly. The first few tentative scouts arrived and could hardly believe their good fortune. They nearly tripped over each other to get back to the colony. Within minutes a soft, appreciative hum arose in the barn, and we lifted our faces to the doorway to see the buffet line approaching.

I would be a liar if I said that I remained calm the entire time. In all truth, I freaked out. I was trapped in the barn by a stinging cloud! In horror, I looked down at myself. My job was to take the dripping, sticky frames that Mark prepared and step up onto a stool, lift them overhead and put them in the extractor. I was sticky with honey. It was in my hair, on my hands, across my forearms and my jeans were tacky. Dozens of little legs began to tread across my hair and land on me with interest. I could think of no better time to freak out.

It is a strange sensation to walk through a cloud of bees. Like swimming with sharks, I imagine. There is the thrill of danger, the excitement of the unknown and desire to savor the adventure, and then there is the sliver of sanity remaining that tells you to get out. At any rate, the cloud extended from our honey pails, through the barn, out the door, and several yards beyond it as a funnel of bees ascertaining their whereabouts spun in the air.

I am happy to say I did not get stung. I was prepared for it, I can tell you. The trick is to walk slowly and gently, and the bees will navigate around you. It hurts them to slam into you while they are flying, so a bee does not want to smack you any more than you want her to. It is a reaction to pain that makes her curl up and sting. It is unnerving to have her land on you, for a moment cleaning her wings or thinking about what to do next, as if you were a giant flower.

The next summer Mark built an observation hive.

"Let's put it in our house, so we can watch them!" he said excitedly.

"Fine," I said. By now I had come to appreciate our bees, and even occasionally read *Bee Culture Magazine* and the *American Bee Journal*. I could identify the queen, workers and drones with ease. In celebration of my first bee sting, Mark had bought me my very own hive tool and I even got to choose the color.

My husband amazed me with his knowledge and appreciation of honey bees and their personality. He never wore a veil or gloves when he worked bees, and rarely got stung. "If your bees are stinging you, it's not a good day to work bees," was his oft-repeated philosophy. (High humidity makes bees grumpy it seems so there really is an explanation behind the expression.)

Because I respected his hobby, the observation hive came to reside in our library window. There were a few flaws in this system, the first of which was that the window had to be open a crack for the bees to go in and out. This meant that the four inches of open window not used for the entrance for the bees had to be stuffed with a towel and secured with cardboard. Not a very elegant solution, but it was all an experiment my husband assured me.

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SWARMS

Richard Taylor

Why do bees swarm? One might as well ask why the heart beats, why birds nest and spiders spin, why the earth turns.

A beekeeper has few memories that rival those of the swarms he has seen. It is a thrill unique to this craft. It seems to me I remember all I have ever dealt with, hundreds by now. My thoughts still go back to a distant boyhood, and I see myself bicycling home, barefooted, a large swarm of bees enclosed in a burlap bag and held at arm's length so that none would be injured as I peddled along. The thrill and fascination that filled me then as I watched large swarms stream into hives has never weakened. I still sit in silent wonder, when now, alone, in one of my yards, I hive a new swarm. It follows exactly the pattern established millions of years ago. It is at this point in the colony's cycle that the psychology of the bees becomes most wondrous. It is now that the habits and orientations that have governed their every movement from the moment they first took wing are abruptly halted, to be replaced by a totally new orientation, as though the former had never existed. It is as though they were determined by a destiny laid down in advance. The phenomenon draws a philosopher's attention to the mystery that inhabits every pocket of creation. We see only a small part of the surface of things. The rest will be forever hidden from us, to be appreciated for its felt but unfathomed presence.

Swarms almost invariably issue before noon and, in my latitude, in the months of May and June, reaching a peak of frequency early in June. By the Fourth of July I have ceased giving them much thought. If several days of rain in the Spring are followed by clear, warm mornings, then swarms are likely to issue from the hives in great numbers. Of course wet weather does not by itself cause swarming. The underlying causes are much deeper and are still not fully understood.

The preparation for swarming

takes about 10 days, eight at least, for bees will not swarm until they have reared a number of new queens so that one of them can remain behind to perpetuate the parent colony. It is seldom that uninterrupted rain lasts that long. Therefore, the colonies that swarm in such numbers following wet weather have been preparing to do so before the rain began; the weather only forced a postponement. Although it is considered one of the few near certainties of apiculture that bees will swarm on a warm day that follows days of rain during the swarming season, I have nevertheless made the rounds of my yards on such a day without finding a single swarm. On other days, when for one reason or another I expected to find few or no swarms, I have found a dozen.

Hives headed by queens three or more years old are almost certain to swarm. A colony with a queen less than a year old will seldom swarm unless goaded to it by an inept apiarist. This suggests that swarming might be controlled by requeening one's colonies every year, and in fact this is good advice to one who has only a dozen or so hives. One who has a hundred or more must be content with a less perfect scheme, for otherwise one's beekeeping would consist of little more than requeening. It is not clear why old queens should be the ones to head swarms, and yet there is a certain abstract intelligibility to it. Although old, she is perfectly capable of founding a new colony with her worker daughters. When she is gone, perhaps soon, one of these daughters will have been miraculously transformed into a new queen, assuring the ongoing life of the colony. In the meantime a new young queen has remained behind to perpetuate the "parent" colony.

Given the spectacular character of swarms of bees it is surprising

that they are so seldom seen. Even beekeepers, who are constantly on the alert during the swarming period, seldom see them except in their own beeyards or when summoned by someone else who has discovered one, probably for the first time in his life. The swarm, after it issues from the hive, is in the air rather briefly. For those few minutes it is awesome. The sight fills the beekeeper with excitement and, if the swarm is from one of his own hives, with consternation, for he sees in it the destruction of his hopes for a large harvest of honey from that hive.

People unfamiliar with bees and unattuned to nature are filled with terror by the sight and flee with their hands on their heads. In fact, there is nothing personally threatening about a swarm of bees. Without being hurt one can stand in the very midst of it, the thousands upon thousands of bees swirling about on every side, a few alighting on one's head or on an ear or a shoulder, then taking wing again to rejoin the foray. Provided one gets one's spirit in tune with the excitement and is careful not to crush a bee inadvertently or to let one become entangled in clothing or hair, the chance of being stung is exceedingly remote.

After such a commotion silence soon falls upon the scene, and the swarm now hangs quietly and inconspicuously on some nearby branch, bush or post. The colony that produced it has resumed its accustomed activity, as though nothing whatever had happened, and even the most expert beekeeper finds it hard to say which colony this is unless he was there to see the swarm come out. Now one understands why swarms are seen so seldom. It would be easy to stand within a few feet of this clustered mass, composed of perhaps 20,000 bees, and not know it is there. Even an experienced beekeeper seldom finds stray swarms.

"I still sit in silent wonder, when now, alone, in one of my yards, I hive a new swarm."

In his own beeyard it often happens that a swarm, which he had not suspected was there, suddenly breaks cluster almost at his elbow, and he stands in helpless dismay as it moves off across the meadow in a vast cloud, never to return, to store in some hollow tree all the honey that he thought would be his. Now is the time for the beekeeper to remind himself that nature recognizes no principle of human ownership. Certainly the bees do not.

During the swarming season people discover clustered swarms in their yards in what seem to be extraordinary places. This is when I receive telephone calls from persons I have never heard of, whose anxious inquiries have turned up my name, as well as from the police and fire departments. The bees' choice of a clustering point is generally arbitrary. It can as well be some lamp post or traffic light as an isolated tree in the country. I have been summoned to the heart of the city to deal with a swarm clustered on a fire hydrant and arrived to find the street barricaded and the police directing traffic clear of the danger point, keeping the curious at a safe distance and being careful to maintain that distance themselves. This is evidently one of the hazards of police work not dealt with in police manuals. To appear in such a setting clad in sandals and tennis shorts and deal casually and expertly with the cause of all this alarm, accompanied by many "ohs" and "ahs" from the bystanders, is a pleasure that can be matched in few crafts.

The occasion also offers a good opportunity to convey to people that the danger exists only in their confused perception. Bees possess stings only for the protection of the hive. Swarming bees have no hive to protect, and therefore no inclination to sting. I gently dislodge them into my big swarm funnel and swarm box, occasionally brushing a stray bee from my ear or nose or clothing, then drive off, as tranquility settles once again on the human scene.

People are sometimes terrified to discover a swarm in their yard and will eagerly pay an exterminator any fee to dispose of it. If boys discover it they treat it as a target for stones. Often the impulse to mutilate and

destroy seems to arise spontaneously in people when they are confronted with something unfamiliar in nature. More than once I have been told of a swarm of bees and, arriving upon the scene, have found ashes, char, and the odor of kerosene, and many thousands of lovely honey bees scattered on the ground, dying or dead. One would think it enough to tell people that bees are essential to the natural ecology and agriculture. Those who cannot understand this will hardly understand that nature labored millions of years to perfect these beautifully complex creatures, and that they have as much right to be in the world as their frightened tormentors.

The swarming season is always filled with surprises. One of the happier ones was the most recent. I saw a huge swarm in the very top of a large apple tree near my home apiary, far beyond reach of any combination of ladders and poles that I could assemble. So I ruefully abandoned it to nature. Within an hour, standing again near that spot, I was astonished to find this enormous limb on the ground, as though by a divine intervention, and there, before my unbelieving eyes, was my great swarm, confused but still together, within a foot of the ground and a few feet from the empty hive into which I forthwith dislodged it. That limb had withstood storms and gales for the better part of a century, and then chosen this moment, when there was no wind, to collapse. The weight of the swarm seemed hardly sufficient to make the difference.

Driving to and from my yards one Spring, a Spring when swarms had been unaccountably scarce and I was wishing I might come upon a few more, I suddenly had the fleeting feeling that I had espied one from the corner of my eye, a great distance away across two widely separated lanes of highway and in the middle of a woodlot. Just for that instant it seemed to me that I had caught a glimpse of its catenated silhouette against a patch of blue sky. Such discoveries almost always turn out to be illusions arising from hope, as the "swarm" materializes into a collage of leaves or the refuse of tent caterpillars.

This one, however, turned out to be real, as I found when I had maneuvered my car back to the spot. There were no apiaries around there that I had ever seen or heard of, but that fact was not by itself remarkable. Swarms often travel great distances and recluster along the way. I took the spare hive that I keep in the car for just this purpose, set it under the swarm, which was only a few feet from the ground, dislodged the swarm in front of it as I had done countless times before, then continued on toward home and supper. A week or so later I returned to find the hive where I had set it, now taken over by the bees, as I had fully expected. Since the day was wet and few bees were flying, I slipped a screen into the entrance and carted the hive off to my buckwheat yard in the woodlot. That was many years ago, but I can still point to the colony established that day. Now I can never drive past the spot where the swarm was first seen without looking over to it again, as though expecting to see another. In fact, I like to recall how I discovered it, over that considerable distance and while driving along, for it was truly a feat of sorts, the kind of thing that happens very rarely in a lifetime. I take pride in it, even though it is of no significance to anyone else in the world. That colony has never failed to store up a good crop.

So just as nature sometimes reclaims my bees and distributes them to the safety of tree hollows, so also does she sometimes freely give.

Few things are so remarkable as the abrupt change in the bees' psychology that is wrought by their swarming. Normally, they mark the location of their hive with precision, unerringly returning to it after a foraging flight of many miles. If the hive is moved as little as a foot to one side the bees go first to the spot where it had been before making a fresh approach. This orientation is totally disrupted by swarming, so that the bees appear to suffer a complete loss of memory. If, for example, the swarm is hived, and the new hive set alongside the very hive from which the swarm issued, the bees will nonetheless disregard the original hive - the one into which they were born and to which they had unfailingly returned hundreds of times. Nothing will induce them to enter it again so long as their new

hive is there.

Indeed one would suppose that any stray bees from the swarm that were in the air or off scouting when the swarm was hived would easily find their way back to one of the other of these two hives. They would be welcomed at either, although instantly assaulted by the guard bees if they attempted to enter any other hive in the apiary. But they cannot find their way to the hive from which they issued, nor to the one next to it, in and out of which their sisters now freely pour, even though these hives may be only a dozen feet away. Days later one can return and find these stray bees still aimlessly circling, their orientation changelessly fixed to the cluster spot the rest of the swarm has abandoned. They retain their futile attachment to that spot until, days later, they perish within sight of what was so recently their home.

On the other hand, if the queen is removed from a clustered swarm, within only a few minutes all the bees return to their hive - not in a random and haphazard way, but en masse, as if at a signal. So they are not forgotten at all! One sometimes reads that if a handful of bees from a clustered swarm is shaken about in a bag of flour and then released, one can then tell from which hive they came by seeing to which one they return. This has never worked for me, and I believe it is something writers have fabricated. The dusty bees in my experiments were irrevocably oriented to their swarm cluster, and no signal that I was capable of producing was able to budge them from it.

How are such things explained? No one knows. Perhaps someday someone will be able to explain them, perhaps not. But I believe there are bees, indistinguishable from the others, who somehow direct the rest, and that the swarm is entirely dependent upon signals from them, instantly understood by the bees but still hidden to us. One naturally imagines that the queen would play this role, so appropriate to a monarch, but this is certainly false. The queen is the most helpless, least resourceful bee in the entire swarm, displaying nothing but fear, stupidity and an eagerness to do whatever her daughters tell her to do.

Why do bees swarm? One might as well ask why the heart beats, why birds nest and spiders spin, why the earth turns. Abstractly, the phenomenon is quite understandable. The perpetuation of the species cannot be assured simply by colonies of bees becoming ever more populous. Beyond a certain point the size of a colony serves no purpose whatever. Although a colony of bees in a tree hollow might become ever so populous, this does not in the least insure that the tree will not be lost to a fire or to the ax of a woodsman. From the standpoint of the life of the species, then, nothing is accom-

plished by sheer numbers. If, on the other hand, that colony has given rise to others like itself in other trees and hollows, then nothing of significance is lost when it perishes itself, as sooner or later it must. Other colonies are now in the world to carry on the life that it is the mission of every living thing to perpetuate. **EO**

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BEEKEEPER'S WIFE ... Cont. From Pg. 36

This system worked for a while. We were highly entertained by our little colony, and they flourished in their new home. Guests at our house were likewise enthralled by this addition to our library, and we smiled proudly. One night, however, the first of a series of glitches became apparent.

I found my cat obsessively trailing something across the carpet in the dark. I switched the light on and called to him, stopping quickly in the doorway. The honey bees had escaped!

It has always amazed me how fast a scream perfectly pitched and at sufficient volume, can incite action in others. My wavering cry of alarm brought Mark to the room where he saw the honey bees crawling all over the room, buzzing. Now that the light was on, they flew up to the bulb like stupid moths. Mark immediately set to work with a plastic cup and began picking up the bees one by one, depositing them in the cup and returning them to their home. As if I was not in full-scale panic mode as is, in the meantime my cat had finally eaten one, and the sting was now lodged in the roof of his mouth. The bees marooned on the light bulb had to wait while I called the vet and we extracted the sting with tweezers.

Finally, all the bees were collected and returned to their appropriate container, and the little hole they had found was resealed. I was unimpressed by this encounter with them, and even more so after I stepped on a runaway in the hallway who stung the arch of my bare foot.

Mark assured me that the problem was fixed, and all hatches were secure. But over the next several weeks more bees continued to escape with Houdini-like resources. My cat - who is fine - while never eating another bee, remained fascinated by them and crept along behind as they crawled along our floor. Without fail, he alerted me to their presence (I am near-sighted) and I never got stung by any of them again.

The observation hive made a discreet departure not too long after that.

In the end, love is an infectious emotion, and despite my fears and misgivings, I came to love beekeeping, too. Oh, yes, I still light the dumb smoker and I still run and fetch and carry and do unpleasant work. But, I also feel the satisfaction of a good honey year, the anguish of a dying colony and the joy of a winter where all the colonies survive.

Mark and I now average fifteen to twenty hives. We use our beeswax to make candles and soap, and sell honey and pollen locally. Mark is always happy to talk about bees, and in his spare time lends a hand to beginner beekeepers and frequently gives tours and lectures to school children.

So, you just never know what great things there are to learn out there. Incidentally, I am thinking about investing in a blowtorch to light my smoker with, and will let you know if it works. **EO**

Amanda Whitney is a hobby beekeeper, part time gopher, and freelance writer from Walpole, New Hampshire.

?Do You Know? Answers

1. **False** The effective life of individual watermelon flowers is one day. Vines have both male (staminate) and female (pistillate) flowers. Each female flower should receive at least 8 honey bee visits during the receptive period. From 500 to 1000 pollen grains must reach each pistillate flower for adequate pollination and these must be distributed on all three stigmatic lobes to ensure a well-shaped watermelon.
2. **True** Pollination in the onion flower occurs when pollen is transferred from the dehiscing anthers of one floret to a receptive stigma of another floret. Self-pollination within the floret is impossible. Cross-pollination between plants is common and even obligatory in the fertilization of male-sterile onions used in hybrid seed production. In carrots some self and cross-pollination occurs when umbels rub against each other in the wind and several species of flower-visiting insects contribute to pollination but honey bees are needed to provide adequate numbers of pollinators for commercial seed production.
3. **False** Muskmelons have male (staminate) and hermaphrodite (complete or bisexual) flowers on which fruit is produced, but commercial yields are not possible when there are few insect pollinators.
4. **True** In contrast to bumble bees and other wild native bees, honey bees show a preference for the extra-floral nectaries of cotton and often seem reluctant to enter the cotton flower.
5. **True** Peach flowers are highly attractive. The ovary contains two ovules, but only one ovule normally develops at the expense of the other, leading to the development of a one-seeded stone.
6. **True** Bees are essential because the pollen is relatively heavy and is not wind blown, nor is it likely to come in contact with its own stigma.
7. **True** Date palms are normally dioecious (trees are either male or female), although occasional trees may be bisexual at times. Pollen must be transferred from male (staminate) trees to female (pistillate) trees in order for dates to be produced.
8. **False** For eggplant, wind is not a factor and vibration of the blossom will not cause a sufficient deposit of pollen on the stigma. The plant is not self-fruitful and insects are required to transfer the pollen to the stigma.
9. **False** Cranberries have a low level of attractiveness overall to bees, thus the bee population should saturate the competing plants so the bees will visit the cranberry flowers.
10. **True** While bees do visit some varieties of soybean flowers for nectar and pollen, there is little evidence that seed production benefits from insect pollination. The anthers dehisce before the flower opens so that the stigma is in contact with and receptive to the pollen on the anthers. Pollination and fertilization is usually accomplished before the flower opens, thus the crop is considered to be self-fertile.
11. Tomato type flowers require that a bee hang upside down and vibrate its thoracic muscles to release the pollen from the anthers. This behavior is known as buzz pollination. Bumble bees are able to buzz pollinate flowers while honey bees seem not able to do so.
12. Wind pollinated plants produce large quantities of light-weight pollen grains, whereas, insect pollinated plants produce smaller quantities of dense, sticky pollen.
13. Pollinator is the biological agent responsible for distributing pollen (bee, fly, moth, bird, bat, etc.). Pollinizer is the plant source of pollen used in pollination.
14. Insecticide poisoning throughout the year from drift and insecticides getting on other floral sources found within the orchard. Second, foragers get locked in on other floral sources available before the orchard starts to bloom.
13. Abundance and availability of colonies
Colonies can be moved to the desired target crop
Manageability so peak populations can be available when they are needed
Floral constancy- tendency to visit only one species of plant at a time
Hoarding behavior- work when weather conditions allow regardless of amount of food stores in hive
Communicative dances- rapidly distribute themselves over a target crop
16. Self-unfruitful- does not set commercial crops when self-pollinated with its own pollen.
17. Bumble bees are preferred because of their long tongues (proboscis), which makes them especially effective in pollinating deep, narrow tubular florets. Leaf-cutter and alkali bees are very effective in the pollination of alfalfa because they have less difficulty with the flower-tripping mechanism in comparison to honey bees.
18. Pumpkin and squash flowers normally open at daybreak and close by noon. Pollination is most effective in early morning, primarily before 9:00 a.m.

There were a possible 25 points in the test this month. Check the table below to determine how well you did. If you scored less than 12 points, do not be discouraged. Keep reading and studying- you will do better in the future.

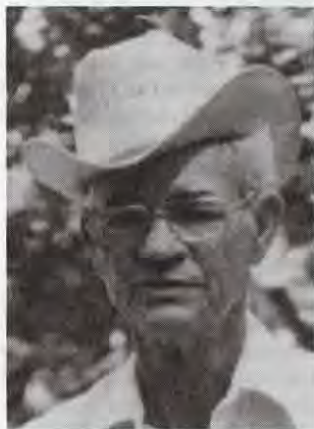
Number Of Points Correct
25-18 Excellent
17-15 Good
14-12 Fair

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

GLEANNINGS

JUNE 2001 • ALL THE NEWS THAT FITS

ROY WEAVER



Memorial services for Roy Stanley Weaver, Jr., 83, of the Lynn Grove community were held Monday, April 23, 2001 at the Lynn Grove United Methodist Church. The Rev. Melissa Martin of Lynn Grove United Methodist officiated.

Mr. Weaver died Friday, April 20, 2001 at his home. he was a

lifelong resident of the Lynn Grove community and was the owner of R Weaver Apiaries. He graduated from Texas A&M University in 1938. He was member and past president of the American Beekeeping Federation, the Texas Beekeepers Association and the ABBA. He served as a colonel in the U.S. Army during World War II and was a member of the Lynn Grove United Methodist Church.

Survivors include his wife, Lesley Armstrong Weaver of Lynn Grove; a son and daughter-in-law, Richard and Linda Weaver of Lynn Grove; two daughters and sons-in-law, Susan and Bob Stoval of Crosby and Kathy and Pat Ferguson of Austin; a brother and sister-in-law, Binford and Binnie Lou Weaver of Lynn Grove; two sisters Lynette Walker of San Antonio and Reba Lou Campbell of Waco; four grandchildren and three great-grandchildren.

Where's ARS and Conservation?

USDA 2002 BUDGET

Agriculture Secretary Ann M. Veneman said (April 9) the Bush Administration's FY 2002 agriculture budget includes responsible increases for plant pests and animal disease programs, food safety, trade programs, and other important Department activities. Veneman has also authorized an additional \$32 million in FY 2001/2002 to increase inspection personnel to protect against animal and plant diseases like foot-and-mouth at major U.S. ports of entry. The FY 2002 budget provides \$849 million in program funding for USDA's Animal Plant Health and Inspection Service, up \$174 million over 2001.

The budget also strengthens the Agriculture Quarantine Inspection Program which helps protect the U.S. against animal diseases like foot-and-mouth and BSE, by re-

questing \$13 million in additional program support.

Veneman announced the authorization of an additional \$32 million to hire approximately 350 additional personnel at critical ports and international airports to protect against pests and diseases. This includes 127 permanent officers and technicians, 27 canine officers, 173 temporary inspector positions and 20 veterinarians. These positions are over and above the levels indicated in the FY 2001 and FY 2002 budgets and will be financed from available revenues in the APHIS user fee account. Other budget priorities include fully funding the Food Safety Inspection Service at \$716 million, an increase of \$21 million over FY 2001. This includes an increase for pay and benefits to support the FSIS' 7,600 meat and poultry in-

Continued on Next Page

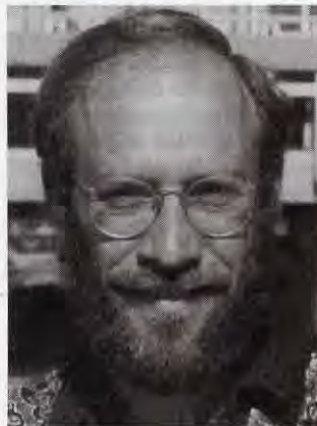
Academic Of The Year

WINSTON AWARDED

He's a bee expert by trade. But his ability to get people buzzing about science through his writing is rivaling his lab achievements. Simon Fraser University biological sciences professor Mark Winston is the 2001 recipient of the Academic of the Year award. The distinguished honor is presented annually by the Confederation of University of Faculty Associations of British Columbia (CUFA/BC). The award is bestowed on academics whose work is making an outstanding contribution to the wider community.

This year, the confederation considered nine candidates from four participating universities, SFU, the University of British Columbia, the University of Victoria and the University of Northern British Columbia. The confederation's executive director Robert Clift says Winston was the favored recipient not just because of his groundbreaking research on integrated pest management to salvage B.C.'s ailing bee industry. The selection committee was even more impressed by Winston's ability to generate public discussion about science by putting pen to paper.

In between working on his sixth book and developing pesticide-free treatments for bee parasites, Winston writes two articles a month for the *Vancouver Sun* and a monthly column for *Bee Culture*, a leading beekeeping journal



in the U.S. He covers a variety of hot topics, including research funding, the environmental impact of chemical-based pesticides, research ethics and genetic engineering, which is the subject of his latest book.

"Through his writing, Mark has repeatedly helped the public understand not just the short term economic benefits of university research but its long term contribution to society's advancement," says Clift.

As the 2001 recipient of the Academic of the Year award, Winston receives a \$2,000 check and a specially commissioned memento from the CUFA/BC. In the last 15 years, Winston has received numerous prestigious research awards, including the Fulbright and Killam fellowships.

DR. MEDHAT NASR MOVES TO NJ

The support from the beekeepers, OMAFRA, and the AAC gave me strength, means and challenges to establish and maintain the Tech-Transfer program for serving the beekeeping industry in Ontario. Despite all of the unavoidable constraints that were imposed on this program, we succeeded to carry on this program for eight years.

We have proved that the IPM can work and we can be self sufficient in Ontario. We have shown that all the promised benefits of the long-term strategy for parasitic mite control can be accomplished if genuine efforts are made. Together we were able to put Ontario beekeeping Tech-Transfer program as a model to the beekeeping industry

Continued on Next Page

spectors. The budget also provides \$126 million in funding for the Foreign Agricultural Service, a \$6.4 million increase over FY 2001. This additional funding will help bolster USDA's capability to address technical trade issues and to strengthen market intelligence capabilities for overseas posts. Funding for USDA's Export Guarantee Programs are estimated at \$3.9 billion, an increase of more than \$100 million over FY 2001. The Foreign Market Development Program, the Market Access Program, Quality Samples Program and Export Enhancement program will remain at 2001 levels while funding for the Dairy Export Incentive Program is estimated at \$42 million, which is slightly higher than the 2001 estimate. The FY 2002 budget request also implements the new Agricultural Risk Protection Act so farmers will have improved crop insurance as soon as possible. It provides \$969 million for agricultural research redirecting a portion of ongoing research into important new areas and for additional work to prevent and control exotic diseases and pests with special emphasis on BSE and \$7.5 million to support work on biotechnology.

However, farmers and ranchers nationwide weren't pleased with some of the federal budget for

2002: The Bush administration proposes to drastically cut funding for agriculture conservation and farmland protection efforts. Programs to be zeroed out include those that offer farmers incentives to protect water supplies, create wildlife habitat on farmland, and permanently protect their farmland from sprawling development.

The programs being cut, including the Wildlife Habitat Incentives Program, Farmland Protection Program, Wetlands Reserve Program and others, comprised less than four percent of total farm spending of \$32 billion in fiscal year 2001. That relatively modest amount of funding was overwhelmed by requests for assistance: For the program that encourages farmers to restore wetlands alone, known as WRP, three out of every four farmers requesting assistance were rejected.

"At a time when the world is getting a much clearer view of the many links between good conservation practices, food, farmland and quality of life, funding these conservation programs is more important than ever," pointed out Ann Sorensen, head of research at AFT's Center for Agriculture in the Environment at Northern IL University. "America's farmers aim to be good stewards, but we cannot tell them that they must carry the entire burden of providing environmental benefits for us all."

HONEY LOAN RATES

The Department of Agriculture's Commodity Credit Corporation (CCC) announced May 1 that the loan repayment rate for the Honey Nonrecourse Marketing Assistance

Loan and Loan Deficiency payment Program during May 2001 is 51.0 cents per pound, unchanged from April 2001. June data is available at www.fsa.usda.gov

in North America. We were able to keep our bees alive against the ravage attacks by mites, produce the best quality of honey without any residues of pesticides, and provide healthy bee colonies for pollination without disruptions. All of us should be proud of these accomplishments.

I had to make the most difficult decision to find a different job in an institution that will offer a peaceful and healthy environment to work. Leaving what I built behind was very difficult. The consoling thing is that I will continue doing what I love to do. I have accepted a position as an extension faculty position at Rutgers University, New

Brunswick, NJ. My mandate is to work for the New Jersey-USA beekeepers to help them getting through these tough problems (mites, small hive beetles, and Varroa resistance to miticides). I am sure that this job will be a different challenge and together we can make a difference.

I am very grateful to all the beekeepers and apiculturists across Ontario, Canada, and U.S. I am grateful to Ontario beekeepers, OMAFRA, and AAC for their financial support. Inspiration, challenge, integrity and vision are the best to learn from all of you. I will be always ready to help if you need me.

What About Honey?

MEAT PRICES REPORTED

The U.S. Department of Agriculture announced (April 2) initiation of the livestock mandatory reporting program. In the past, all market news has been reported to USDA's Agricultural Marketing Service on a voluntary basis. The mandatory program requires the reporting of market information by packers who annually slaughter an average of 125,000 cattle or

100,000 swine, or slaughter or process an average of 75,000 lambs. Importers who annually import an average of 5,000 metric tons of lamb meat products are also required to report. Mandatory reporting will provide information on 80 to 95 percent of the volume of all cattle, boxed beef, slaughter hogs, sheep, lamb meat, and imported lamb meat traded.

ABF TO MEET IN SAVANNAH

Savannah, GA will be the site of the 2002 American Beekeeping Federation convention. The meetings will be held at the Savannah Marriott Riverfront, located on the Savannah River adjacent the historic, restored River Street complex of shops and entertainment.

The convention will open on Wednesday morning, January 16 and close with the annual banquet on Saturday evening, January 19. Considerations are being given to having a tour day on Tuesday before the convention opens to allow attendees to take in the many sights of the area without missing

any of the meetings. Planners are also considering setting up a post-convention bus tour of North Florida and South Georgia attractions and beekeeping operations. Watch for regular announcements of plans as they unfold - in this publication and on the ABF website, www.ABFnet.org.

For information on attending the convention or exhibiting your products and services in the ABF Trade Show contact the ABF Office, P.O. Box 1038, Jesup, GA 31598, 912.427.4233, FAX 912.427.8447, email: info@ABFnet.org

MASS EAS IN AUGUST

The Eastern Apicultural Society of North America, Inc., will hold its annual beekeeping Short Course and Conference during the week of 06-10 August 2001, at the Massachusetts Maritime Academy, on Buzzards Bay, Cape Cod. Don't miss this one! It'll be BIGGER than big. EAS 2001 website URL: www.capecod.com/bcba/eas2001.html Contact: Jan Gaglione, Registrar (978) 535-1622, email jgagli1646@aol.com -or- Kathy Hough, Registrar (978) 468-6000, beesbest@mediaone.net See YOU there



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HONEY INDUSTRY TESTIFIES BEFORE HOUSE AG PANEL

On May 3, 2001, representatives of Sioux Honey Association, American Honey Producers' Association and American Beekeeping Federation unveiled their farm policy recommendations before the House Agriculture Committee. Their joint statement was on behalf of the entire American beekeeping and honey industry including, Mid-U.S. Honey Producers, U.S. Beekeepers and the National Honey Packers and Dealers Association.

The organizations support a honey program for the 2001 and succeeding crops that would continue, in effect, a program substantially the same as the program in effect for the 2000 crop. The program includes the following features:

1. The use of Commodity Credit Corporation funds to make non-recourse marketing assistance loans to honey producers at a national average rate of 65 cents per pound;
2. Repayment of marketing assistance loans at the loan rate plus interest, or the prevailing domestic market price, as determined by the Secretary, whichever rate is the lower;
3. Eligibility of a producer of honey to obtain a loan deficiency payment if the producer agrees to forgo obtaining a marketing assistance loan; the loan

deficiency payment to be at a rate by which 65 cents per pound exceeds the marketing assistance loan repayment rate multiplied by the quantity of honey the producer is eligible to place under loan;

4. Marketing assistance loan gains and loan deficiency payments a person may receive for a crop of honey would be subject to the same limitations that apply to loans and loan deficiency payments received by producers of the same crop of other agricultural commodities;
5. The program to be implemented in such a manner so as to minimize forfeitures of honey marketing assistance loans, and a commodity certificate program, similar to the program in effect for other commodities, made available to honey producers so as to encourage the orderly marketing of honey pledged as security for loans;
6. A producer that has marketed or redeemed a quantity of a crop for which the producer has not received a loan deficiency payment or marketing loan gain could receive such payment or gain as of the date on which the quantity was marketed or redeemed.

(Contact: Tim Cansler, timc@fb.org, f:\grb\farmbill-Honey01.503)

DUTY ON DUMPED HONEY

Department of Commerce places an average of 50% duty on \$0.55 Argentine honey (now \$0.82) and an average of 40% on \$0.52 Chinese honey (now \$0.72). Some critical circumstances indicate that an additional 20% will be retroac-

tive to U.S. importers with Chinese honey already here.

What this means is U.S. honey will be selling in the \$0.65/lb. for dark up to \$0.95/lb. light, probably by August. See July issue.

AHPA

APIMONDIA 2001

The APIMONDIA congress in Durban, South Africa from the 28th October to 1st November 2001 is a success measured on the number of papers submitted to be presented at the congress. 370 papers has been submitted that is 100 more than for the last congress in Vancouver, Canada. The presidents of the Standing commissions have done the selection of those papers that are going to be presented at

the congress. They were impressed by the amount of papers and their quality.

What we do not know is the number of participants at the congress. The 10th of June is the last date for paying the low registration fee. And registrations is possible until the last moment. For more information look at our website www.apimondia2001.com or www.apimondia.org

NEW ARS BEE RESEARCH LEADER

Dr. Kevin J. Hackett has been appointed to the position of National Program Leader for Biological Control on the National program Staff (NPS). Dr. Hackett's responsibilities include oversight of the Agency's bee research program. Dr. Hackett comes to NPS from the Beltsville Area where he was an insect virologist in the Insect Biocontrol laboratory. His research focused on designing, producing, and evaluating recombinant baculoviruses for biocontrol of lepidopteran pests, e.g., bollworms. Prior to this he worked on the cultivation, ecology, and use of spiroplasmas in insect biocontrol.

Prior to joining the Agricultural Research Service (ARS) in 1985, Dr. Hackett was coordinator of the eastern program for the John Muir Institute of Environmental Stud-

ies and, in that capacity, was responsible for developing Integrated Pest Management (IPM) programs for the National Park Service, Environmental Protection Agency (EPA), health and Human Services, and NY Central Park, as well as designing curricula for schools in the District of Columbia, and Flint, MI. Dr. Hackett holds B.S. and M.S. degrees in entomology from Rutgers University (conducting foreign exploration on biocontrol of the gypsy moth for his thesis), and a Ph.D. in insect pathology from the university of CA, Berkeley (with thesis research on control of leafcutting bee diseases). Dr. Hackett's interest in bees developed even earlier. Growing up in New Jersey, he worked as a beekeeper helping his father with the family's pollination business on cranberries and blueberries.

HONEY BOARD RESPONDS TO FOIA REQUEST

On April 19, 2001, the National Honey Board released staff salaries by position to the USDA in response to a Federal Freedom of Information Act (FOIA) request.

In its response to the FOIA, the Board questioned whether or not NHB Staff members are considered federal employees and should be subjected to public scrutiny.

"The Board members have been good stewards of the industry's money and have nothing to hide, but we are concerned about the impact this has on the privacy rights of our staff," said National Honey Board Chairman Brent Barkman.

The salaries released show that staff member salaries are not competitive in the Denver-Boulder market. The Board has provided the ranges listed so that the industry can gain a full understanding of what staff members might be paid in the open market.

The following are salary ranges by staff position within the Denver market:

Position	Salary Range
CEO	\$103,000-177,000
Director	\$64,000-84,000
Industry Services	
Director	\$69,000-95,000
Scientific Affairs	
Administrative	\$52,000-77,000
Assistant	
Director	\$61,000-91,000
Information Technology	
Communications	\$33,000-45,000
Director	
Administrative	\$37,000-52,000
Assistant, Records and Reporting	
Receptionist	\$20,000-28,000
Fulfillment Coordinator	
Data Entry Clerk	\$26,000-33,000

Ranges are based on comparable job descriptions for the Denver market found on salary.com.

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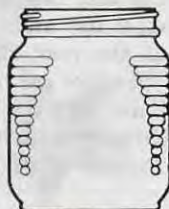
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The father of modern beekeeping, Lorenzo Lorraine Langstroth, born 1810 Christmas Day, died October 6, 1895, understood the first principle of hive construction. Leave about a 3/8-inch space on all inner surfaces. This deters the honey bees from making extra bridge comb across wider spaces. And, it also discourages the honey bees from filling in smaller spaces with propolis. Both cause the inside of the hive to stick together making hive examination a destructive process. The goal was to build a hive to get into and out of, without destroying what's inside.

Other than discovering the notion of the bee space, which others were close to discovering, Langstroth failed at most things. He had poor health and had to quit the full-time ministry. He tried to sell his hive or the rights to build them and made little money. He even helped promote the introduction of Italian queens. Those new bright yellow, prolific ones entering the U.S. at the time. Again, he failed to benefit.

In the book *The Life of Langstroth*, Cornell University Press, Ithaca (1942) Florence Naile shares a memorable story, in Langstroth's own words, about an important event in his early life. Despite failing from an economic standpoint, he was a great man who had great inner values. At college he learned an important lesson. In his own words:

"In the Summer of 1828 there occurred what will ever be famous in the history of Yale College as the great "Bread and Butter Rebellion." The students were all required to board in commons, unless they could procure a physician's certificate that their health required a different diet. The Summer was unusually hot. The bread was not always sweet nor the butter fresh, and loud were the complaints against the regular fare. At a meeting of the different classes a resolution was unanimously passed that the students should show their dissatisfaction by absenting themselves one Monday morning from the dining hall. Word had come to our venerable president, Jeremiah Day, of what the students purposed. So after morning prayers, which he usually conducted, he addressed them, in his wonted kind and courteous manner, telling them that, if they had causes of complaint about their fare, they ought in a respectful way to make them known to the faculty, whose interest it was to have them remedied. He closed his appeal by affectionately warning us against any hasty and improper proceedings, which could result only in evil. But our passions were too much inflamed, and we were too much under the influence of those who had planned the original demonstration, to listen to anything our good president could say. So when the bell rang out the summons for breakfast, crowds gathered around the dining hall. None entered; but all, with loud shouts of defiance, expressed what they thought to be a proper sense of their wrongs. Before dinner the classes met again for consultation, and their leaders now advised that they should decline to take any meals in common until they had sufficiently expressed their indignation for the kind of food which had been served to them, and had obtained assurances from the faculty that their grievances should be addressed. Thus was inaugurated as absolute rebellion against the constituted authorities.

"Before entering college I had promised my parents to obey its laws, and to give them no occasion to regret the sacrifices which they were making in my behalf. I saw that the course which we were now pursuing was a direct violation of that pledge; and without consultation with anyone, I determined to retrace my steps and to go into the dining room at the next meal, even if I went alone. At a meeting of our class I announced this determination, saying that we all knew we were violating our matriculation pledges, and that, while I did not profess to be governed by a higher sense of right than others, I did intend to redeem as far as I could the promise which I had made to my parents.

"I left the meeting after these remarks, and a committee was appointed to remonstrate with me, and to assure me that, if I persisted in

my intentions, I should be treated by the whole class with merited contempt. The hour for dinner arrived, and the students were assembled in unusual numbers, as the report of what I meant to do had become generally known. Yells of execration greeted my appearance, as alone I ascended the steps leading into the dining hall; stones were thrown at me; and one student, more daring than the rest, drew a pistol and threatened to shoot me. Nothing, however, could move me, for I was nerved to such a pitch of determination that I would have submitted to instant death than change my purpose.

"In the afternoon of that day, my guardian, Prof. Olmsted who knew nothing of my intentions until all was over, informed me that, by vote of the faculty, I had been excused from entering the hall again, and that my safety, and his duty to my parents, demanded that he should prevent it. I told him that they might kill me, but that I would never yield to them; and when I entered again, quite a number, most of whom I think were professors of religion, were emboldened to enter with me.

"The issue of this affair was, that some students were expelled from college, all recitations were suspended, and the students returned to their homes. Only after signing due apologies were they allowed to resume their studies, at the beginning of the next year. The course which I had taken, although at first so unpopular, in the end made me a host of friends. It was probably the turning point in my life, for my natural disposition often inclined me to yield my own convictions of duty in order to be on the popular side. It would be difficult to tell how much I owe to that 'Bread and Butter Rebellion.'"

Langstroth faced early on the conflict between principles and popularity.

L.L. Langstroth & The 1828 Bread & Butter Rebellion

Rick Green

BOTTOM BOARD