

| | | |
|------------------------|----|----|
| Queen Genetics . | 26 | |
| Screened Bottom Boards | | 30 |
| Bee Removal II | 38 | |
| Building Nucs | 48 | |

Bee Culture

NOV 2002



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Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

NOVEMBER 2002 VOLUME 130 NUMBER 11

FEATURES

APIMONDIA 2001 23

Inventions, bee products, and residues.

Malcolm T. Sanford

QUEEN QUALITY 26

We have enough information on disease resistant honey bees to make better choices about which resistant line to choose and how to find them.

Stu Jacobson

BETTER MANAGEMENT WITH SCREENS & TRAYS 30

Screened bottom boards and trays can tell much about what's going on inside your colonies.

Serge Labesque

SCREENS & TREATMENTS 32

Using screens helps make sure your treatments are working.

Ron Rudiak

BEE REMOVAL II - DECONSTRUCTION 38

The rest of this job, if you're not trapping, requires the right tools, and a good contract.

Charles Martin Simon

HONEYBEAR APIARIES 42

Winter Success in the North. It's cold in North Central Alberta, but these bees thrive. Here's how.

Allen Dick

A GOOD MEETING 50

What makes a good meeting? Darned if I know.

James E. Tew

MAKE YOUR OWN NUCS 45

If you own a few woodworking tools, and have a modicum of talent, you can save \$\$\$, and enjoy doing it.

Peter Sieling

CRAZY COLORFUL CAPS 53

Use different caps on your squeeze bears or bottles and sell more honey this year!

Ann Harman

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Colorful Caps. Small things can make a big difference and maybe the difference between you, and your competitor. Caps courtesy of Blue Magic and Laney Honey.

Flottum photo

DEPARTMENTS & COLUMNS

THE INNER COVER 8

The color of money is ELA.

Kim Flottum

WISE GUY 11

Price takers, not price makers.

RESEARCH REVIEWED 13

Good things come to those who wait.

Steve Sheppard

CLOTTED CREAM 15

Clotted cream may not solve all of Devon's beekeeping problems, but it seemed to help.

Mark Winston

DO YOU KNOW? 19

What do you know about Winter preparation?

Clarence Collison

BEE CULTURE'S BEEYARD 35

Disappearing Disease - An urban myth? Is this a disease? How can you tell?

James E. Tew

BOTTOM BOARD 64

The tip of your nose is worse.

Ed Colby

MAILBOX - 5; NOVEMBER HONEY PRICES - 12; GLEANINGS - 57; CLASSIFIED ADS - 61

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KEEP IN TOUCH

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Vol. vs Wt?

I'd like to comment on Ann Harman's article, "Vol. vs Wt." apparently Ann never had her honey pulled off the store shelf because she had the volume on the label instead of the weight. For some reason the "big boys" (and girls) in regulatory services have decided that honey must be sold by the pound as though it was a solid, while ice cream is sold by the pint, quart, and gallon. But that's okay. It's actually to the advantage both to honey producers and to ice cream makers (especially to those who make the light, foamy stuff).

Putting the weight on labels of pints and quarts of honey is really not a problem at all. Simply write 20 oz. on the pints and 40 oz. on the quarts. Yes, they hold an ounce or two more than that, but who cares? Unless competition is extremely stiff, your customers won't care a hoot whether they're getting 40 or 42 ounces. They can see that they're getting a quart of *YOUR* honey, and that's all they care about. But if anyone would be inquisitive enough to look at the weight, 20 oz. sounds like more than one pint, so you're still ahead. The thing is, you dare not have one drop less in that jar than your label says, but you can put in as much extra as you want and nobody cares.

Melvin Yoder
Decatur, TN

Trials & Errors & NHB

While support for the National Honey Board has plummeted to a razor-thin majority, the debate for or against continues to be incomplete and extremely biased and prejudiced. Both parties seem to feel that messages, in whatever form, should be limited to their good points and carefully avoid any reference to a faulty theory. As a consequence of this, carefully selected meeting

MAILBOX

participants are expected to promote a favorable view. So far, neither camp has shown any interest in technical data. Instead, for some unexplained reason, some industry leaders have on several occasions opposed the introduction of analytic economics in our political dialog.

Is this resistance to revealing all relevant facts a unique thing for our honey industry? Apparently not, since a host of examples can be cited where the best-laid economic plans have been miserable failures, or, as in our case, a troublesome existence. For example, the carefully laid-out economic proposals of Adam Smith, Karl Marx, and the original framers of the National Honey Board paid little attention to the need for later political support. As a result, in each case, the economic objectives failed to receive a trouble-free endorsement.

In light of this confusion, our leadership seems reluctant to do little more than organize another Round Table meeting of a select few. To my knowledge, the agendas at the three Round Tables made no reference to economic research. Instead, at the Chicago meeting, talks in the halls and official meetings were highly critical of the Honey Board, the USDA, and so-called misinformed producers. With usual carelessness and without a study of any kind, a new "in-lieu-of" Packer and Importer board was proposed.

So, at this point, what can we say or do that might relieve the stalemate? I am firmly convinced that a close look at the check-off studies of our leading economists will tell us why we are experiencing problems, but, so far, our leadership has shown little interest. Failing to review these technical materials means that our only chance of really learning will be using the old and

questionable route - trial and error.

Can we afford the delay? Mr. Producer, please think on this.

Glenn Gibson
Minco, OK

First, let me be clear, I'm a hobby beekeeper. Right now I have seven hives and give away all the honey that my family doesn't use. So maybe I have no place in the debate over the National Honey Board. But I am an avid reader of *Bee Culture* and so have followed the hue and cry over the NHB for the past couple of years. But as someone really not affected by the outcome (after all, I don't even buy honey) maybe an unbiased view will find an audience.

First, producers, stop whining. Then do something.

The latest crisis has been brought on because a large number of producers whine about being assessed money to pay for the National Honey Board. The same people are whining because they don't think the NHB is nationalistic enough. In their eyes they just promote honey, not *OUR* honey. And in the latest issue the ABF is whining that even though, in the latest proposal, the producers are assessed nothing, it is unfair that they only have two representatives on the newly proposed NHB, they should constitute half of the board. Even if the producers pay nothing. The ABF wants to have enough members on the NHB to prevent a majority vote. Effectively perpetuating gridlock.

In all the articles I have read all the complaining comes down to:

- Taxation without representation. You have to pay your assessment but don't feel the structure of the board ends up representing your point of view.

Continued on Next Page

MAILBOX

- You feel a honey board's obligation should be to promote domestic honey over imported honey.
- You want it marketed based on quality, not some generic honey-is-good, Mom-and-apple-pie approach that doesn't distinguish between domestic and imported honey.

Well, get over the past and future NHB. It is going to be dominated by the packers and importers. They've got the money. And that means they've got the support of the Department of Agriculture.

Take your two seats on the board and exert as much influence as you can. But then for your own sake create a Producer's Honey Board that meets your objectives. Organize and present some kind of a coherent message to the NHB and the consumer public.

Yes, that would mean assessing yourselves some amount to pay for it. But obviously there is passion out there amongst you producers about this. If you take control over the message being put out to the public perhaps you won't feel so resentful about the assessment. Sell honey to the public the way you want to. If you do it well and you do it right you might even begin to gain the respect of the packers, instead of the disdain you feel they have for you now.

I also think you should get over this domestic versus imported business. Either your honey is better or it isn't. The depression was caused by protectionism. We don't need it and can't afford it. But that is a whole other letter.

Al Fisher
Minnesota

Out Of Sight

In your September issue James E. Tew was wondering why most beekeepers seem to keep their hives hidden away. One compelling reason is to prevent vandalism. The name of the game

here is "out of sight, out of mind."
Gordon Solberg
Radium Springs, NM

Removing Stings

In your August issue Evelyn Bence points out she was taught not to remove stings the 'wrong way' by grabbing and pulling them. This has been accepted conventional wisdom for who knows how long.

A November 2000 issue of *Hivelights* from the Canadian Honey Council printed an article from a study published in 1996 on removing bee stings. Researchers self-administered several bee stings to their forearms and left them in for variable lengths of time. Stings were then removed with a credit card by scraping as is generally recommended. Following this stings were given to the other forearm in the same way. This time the stings were pinched between thumb and forefinger and removed the 'wrong way.' After comparing measurements of welt size and amount of venom injected the authors concluded: "The method of removal does not affect the quantity of venom received by the subject."

I seem to recall that about the same time as the *Hivelights* article appeared, you guys (or was it the 'other' U.S. beekeeping magazine?) did a similar article, pointing out it is more important to quickly remove the sting than it is to waste time trying to do it 'correctly.'

Our local association wrote this information up in its newsletter a few months back. Shortly thereafter, I heard one of our beekeepers pointing out to new members the procedure on how to 'properly' remove stings. Like the sting itself, old ideas just seem to get stuck in there and hang on.

Dick Allen
Anchorage, AK

Bees Should Not Be Imported!

I greatly appreciate being kept in touch with the developments regarding importing bees from New

Zealand and Australia into the U.S.

You ask for comments. I have traveled the world and I am continually appalled that so many disasters have occurred through people – albeit well meaning – transporting various life forms to another country or continent. We have only to consider rabbits from the UK to Australia and the 'Killer' bees from South Africa to America to South America.

After the '39 - '45 war, Germany banned the import of bees. They now have lovely bees and few problems, whereas we have all sorts of mongrel bees from Italy, NZ, Australia, America, etc. etc. It seems to me quite ridiculous that bees from other countries and antipodean continents should be imported and interbred here. They may be O.K. in the first and even second generation, but subsequent generations are extremely nasty to deal with. I know – I've had 'em!

With all the diseases there are about, we should all – surely – be keeping to our own bees. I have discussed this with many people here – importers, bee inspectors, beekeepers and bee breeders – and everyone to whom I have spoken agrees that bees should not be imported. A ban would help to reduce the transfer of diseases and mites around the world.

Peter Smith
Great Britain

Wise Guy BOY

The Colorado Beekeepers Association has nominated the Wise Guy for the beekeeper of the year award! The Wise Guy has shown great leadership in educating beekeepers to the real facts in the bee industry. We would like to honor the Wise Guy at our annual meeting on December 7. We hope the Wise Guy will be able to come and accept his award! Keep up the great work Wise Guy!

Lyle Johnston
Rocky Ford, CO

Blowing Smoke

The content and the quality of James Fischer's article, Blowing

MAILBOX

Smoke, in *Bee Culture* Volume 130, #8 elicit my compliments. Were *Bee Culture* to carry more articles like *Blowing Smoke*, it would soon lift itself out of the category of a trade journal and reach a much wider audience than it probably does today.

John J. McKelvey, Jr.
Richfield Springs, NY

You're Invited

Beekeeping is a very challenging, but also a very rewarding occupation. It seems that around every corner there lurks a new test of our tenacity. Being stubborn, hardheaded and tenacious are not only helpful, but are required to survive in most agricultural pursuits; these traits are especially necessary in beekeeping. Over the past 25 years, I've been amazed at my fellow beekeepers' ability to rebound from seemingly impossible situations. It's about dedication, hard work, and resolve.

As president of the American Beekeeping Federation, this year I've been privileged and cursed to have been exposed to our industry's many problems (I mean, challenges). At times, it has seemed overwhelming, but the ABF is blessed with a dedicated staff, a talented board, and a membership that is diverse and supportive. When we attack challenges as a team, I think we are unbeatable.

Some of our challenges this year were:

- Interruption of our ability to ship and receive queens and packages via the U.S. mail.
RESULT: Victory.
- Permanent honey program in the 2002 Farm Bill.
RESULT: Victory.
- Maintain funding for all four USDA bee labs.
RESULT: Victory.
- Better income returns to producers.
RESULT: Victory.
- Securing a 'yes' vote on maintaining the National Honey Board.
RESULT: Victory.

The ABF took the lead on many of these issues and was supportive in others. Our members have been very involved in these victories.

We raised funds to expand our lobbying in Washington. Through additional contacts with Congress, our leadership presented a convincing message. We handled 75% of the puzzle, but for success we had to complete the remaining 25%. That's where you, the beekeepers of America, the Congressmen's constituents, had to play your role. Thankfully, you did what was necessary and our puzzle was complete. Without the support and action of everyone involved, we could not have been victorious.

Please come to Kansas City for the ABF Convention and join our (your) victory celebration. Let us say thank you. Let the scientists from the USDA labs say thank you. The prize we all worked for so diligently will be on display in Kansas City, Jan. 13-16.

Please come and help us prepare for next year's challenges.

Pat Heitkam, President
American Beekeeping Federation
Orland, CA

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kate@busybeefarm.com

American Beekeeping Federation Jan. 13-16 Kansas City Stephanie Bullock
Stephie@BusyBeeFarm.com

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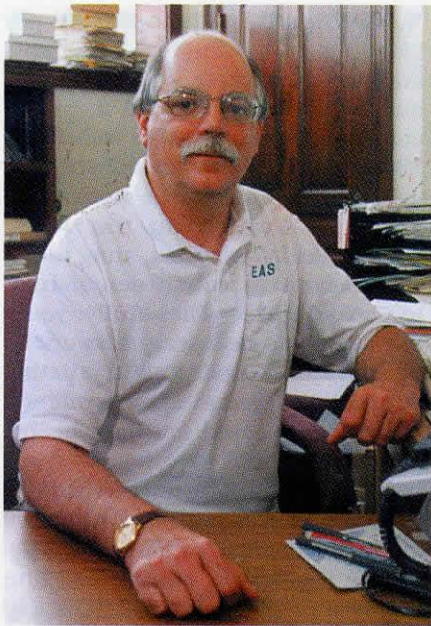
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INNER COVER

I doubt any beekeeper, living or dead, ever sold a load (that's semi load) of honey and received \$1.75/lb for the contents of those barrels on board before this year. Can you imagine selling 20 loads at that price? It happened in September.

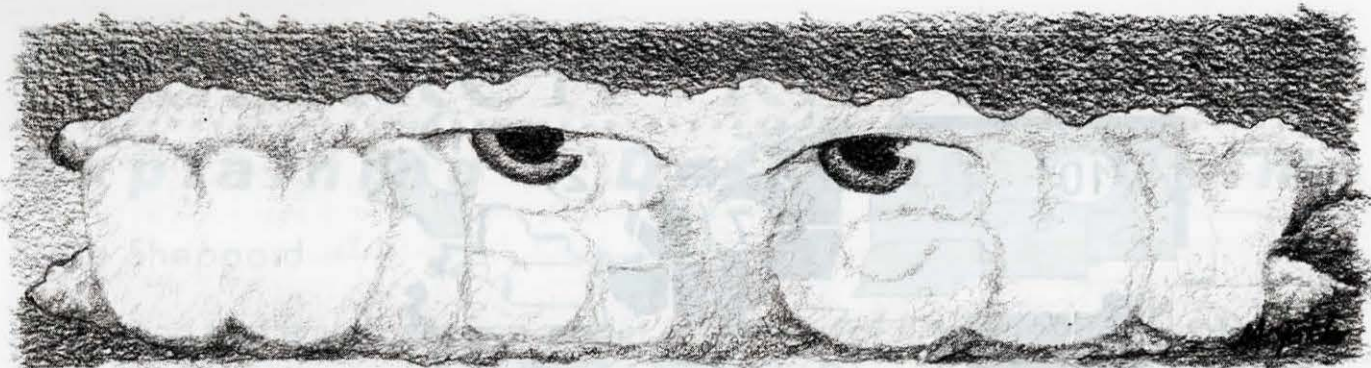
If you want to predict the future, answer the following questions correctly

- How high will the price of domestic (North American) honey go?
- Who has enough money (cash or credit) to pay that price for a million or more pounds? Even 100,000 pounds?
- How much domestic honey will be available, say, by December? By March?
- Who doesn't have enough money (cash or credit) to buy enough honey at that price or higher, to stay in business?
- How many migratory pollinators will not migrate, or cut back on the number of colonies moved next Spring so they can instead move those colonies to honey producing areas, or just stay home to make honey?
- What is the 'opportunity cost' of moving a colony?
- How much higher than \$50/colony will almond growers pay for colonies next spring? \$60? \$80?
- How much will apple, cucumber, cranberry, blueberry, cherry, seed and other growers pay for any colonies at all, let alone enough to do the job right?
- Can a pollinator afford to charge less than \$50? \$40?
- How long will honey from China be found to be contaminated with chloramphenicol?
- Will private operations in the U.S. take control of the majority of Argentina's honey crop, sidestepping Argentina's exporters and U.S. importers thus saving a boatload of money?
- How many beekeepers will lose both their crop and their money when a packer goes belly up without first paying?
- How many packers will get stiffed by a beekeeper who bails on a handshake sale for a higher price offered by somebody else?
- How many beekeepers will lose so many bees this Winter (to resistant *Varroa*; resistant AFB) they can't replace them next Spring from splits, packages or buying at any price?
- If producers ramp up production and increase colony numbers to meet increased domestic demand, will suppliers be able to meet that demand, or will the sale of smaller outfits fill it?
- How many beekeepers will look offshore for early, early queens (either directly from New Zealand and Australia due to new regs, or from the same places via Canada) this Spring to get an even bigger jump on way-south honey crops?
- How many commercial operations will raise queens and sell extra splits this Spring, competing directly with package producers?
- Will the spread of small hive beetle by migratory and package businesses start having significant, lethal effects on northern operations?
- How much is a healthy four-frame split worth? How much for a package? A queen?

- How many of the big six grocery wholesalers will begin to look at honey the same way they do maple syrup – as an exotic, high margin product, raising prices even more, but cutting shelf space?
- Will Honey Nut Cheerios become Corny Nut Cheerios?
- How much can local producer/packers raise their prices, and still be able to profitably compete with national brands?
- Will honey users court domestic producers and promote their products – use ONLY U.S. honey, and charge more because of it?
- Will a cash rich beekeeping industry fund significant and long-term research to solve current and future problems?
- How big will the U.S. crop be next year? Argentina's?
- Will Argentina's economy recover, or get even worse?
- Will the U.S. economy go into further recession? Into a war economy? Or into a moderate to strong recovery?
- How much will fuel cost next Spring? So high that migratory operations can't move? The same?
- Will "organic" honey make a difference?
- Will a Homeland Security Directive guarantee pollination to domestic growers, subsidizing pollination costs?
- Will Wal-Mart capture an even greater share of the retail grocery market next year? What about Target? Super Valu?
- Will three or five big producers band together to form their own packing operation, eliminating the packer middleman?
- Could a dozen big producers run the industry?

Continued on Page 56

**The Color Of
Money Is ELA**



There are many things in the world I do not understand, such as, remember *Leave It To Beaver* and how his mom always wore a dress and highheels to vacuum the floor? I never saw my mom dress up to do housework. Or what about Superman? Where did he put those clothes when he changed in a phone booth? Did he have a sack under his cape to carry them? And why weren't they wrinkled when he put them back on? And in the last ABF newsletter the Vice President talked about why there would not be a joint convention of the AHPA and the ABF and he blamed the "King" for it. I thought Elvis was dead! How could you blame something like this on a man that's been dead for 25 years, or is he still alive? Could he be a beekeeper in the United States? Is he hiding in maybe Montana or Washington?

The real thing I don't understand is how honey is over \$1.50 per pound today and in the Fall of 2000 it was 54¢ per pound. When honey was 54¢ I was told this is all I can offer because it is so competitive. I would ask for 1¢ to 5¢ more and their answer was "forget it, the market is so tight that a 1¢ increase will keep me from selling" to my markets. They further explained that if the price was much higher it would simply kill the market with high prices. Now, today I have offers for \$1.25 to \$1.45 per pound and I hear that over \$1.70 was paid in September! Which story do you believe? Is there that much stretch in the honey market? Or was someone making so much money that now producer prices have caught up with retail pricing? Or have retail marketers raised their prices and done their job to raise the level of income for all segments of this industry? Or has greed entered the picture and marketers

not wanting to lose market share are losing money on some accounts?

Whatever the reason, understand that we continue to be price takers not price makers. We either live with that or change our relationship with packers and the buying public. Either a partnership is developed between packers and producers or they will forever remain competitors. If you don't think so look at the livestock market in the U.S. The major meat packers now control some of the producers by contract feeding livestock. Is this good? I'm not sure, but one thing it did was to take the bumps out of a volatile up and down market. Lenders don't like up and down prices, especially Ag lenders. And Ag lenders do not understand the honey business. Ag lenders understand farms where land, farm equipment and other related products are used as collateral against debt. They don't understand white boxes that can be moved over night. Those shiny silver tanks called extractors and uncapping machines are worth very little at the time of liquidation. Understand that if you value a hive (two story) at \$60, your bank realizes that their lending value may be only 20% of that

because of its mobility and the lack of value at liquidation.

Since this article is about things I don't understand, somebody tell me about honey imports. It appears that the amount of imported honey will reach another all time high in the U.S. this year. The first six months of 2002 we have imported over 95 million tons of honey. In a year when tariffs were placed on Chinese and Argentina honey it still flows in. It has come from Vietnam, Malaysia, Thailand, Chile, Australia, Mexico, Paraguay, Uruguay and every other country that just happens to border China and Argentina (and doesn't have tariff restrictions). If all of this honey existed why did importers and packers pay 100s of thousands of dollars to fight the antidumping action? If there is such a glut of honey in all these other countries why fight the antidumping? Oops, a light bulb just went off - *maybe* this honey really is from China and Argentina and is just moving through these other countries. Do you actually think the people that want to protect the wholesome image of honey would do that?

In a time of cost cutting (when honey was 40¢ to 54¢) packers kept pushing the price down and down in order to be competitive with other packers. The domestic producer had to take unrealistic prices and it simply purged many right out of business. If packers wanted to truly save money why don't they quit using importers? What service do they provide that the packers can't do themselves? Many packers were willing to develop adverse relations with domestic producers, so why not do the same thing with non-domestic producers? Simplify simplify simplify. That I understand.

Wise Guy



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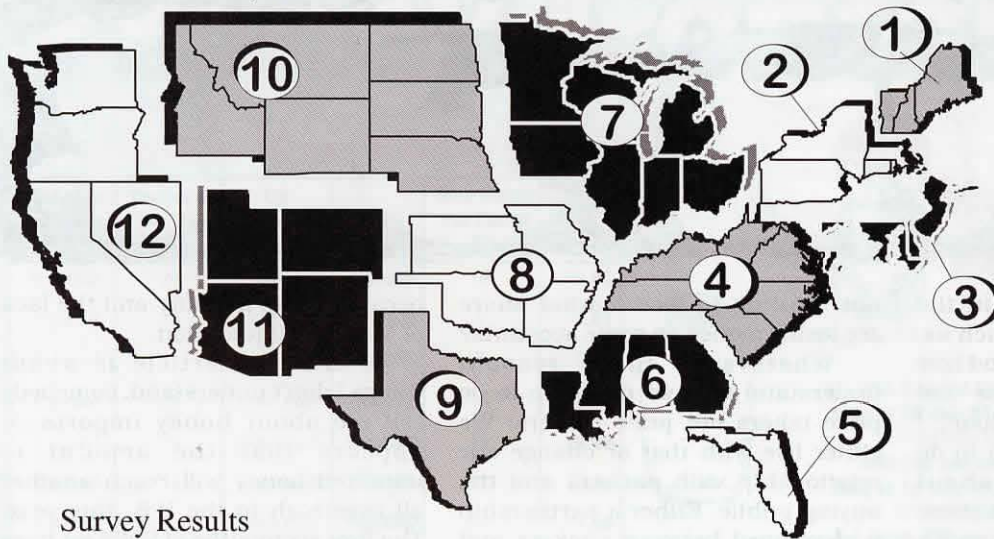
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NOVEMBER - REGIONAL HONEY PRICE REPORT



Survey Results

61% of our reporters have already raised their prices this season, while 68% report that those businesses where they sell their honey have raised prices already. An additional 7% (making 68% total) will have, or will raise prices this season.

What have our reporters been seeing this year? 32% report a below average crop this season. 17% had serious problems with *Varroa*. 3% ran into AFB resistant to terra, while 15% had *Varroa* resistant to Apistan. Only 3% had trouble with Checkmite+, and 6% are wrestling with small hive beetle. The most astonishing report was that 25% had Chalkbrood this year.

Region 1

Pails up, bulk, wholesale and retail steady.

Region 2

Pails steady, bulk and retail up, but wholesale steady.

Region 3

Pails and wholesale steady, but bulk up and retail down.

Region 4

Pails, bulk and wholesale steady, but retail up.

Region 5

Pails and bulk way up, along with retail, but wholesale down.

Region 6

Pails, and wholesale steady, bulk way up and retail inching up a bit.

Region 7

Pails and wholesale steady, bulk way up, and retail up a bit.

Region 8

Pails up a bit, along with retail, bulk way up and wholesale steady.

Region 9

Pails, wholesale and retail up a bit since last month, but bulk way up.

Region 10

Pails and bulk up, wholesale and retail steady.

Region 11

Pails and wholesale steady, bulk way, way up and retail rising.

Region 12

Pails and bulk both up, wholesale up a bit, but retail steady.

| | Reporting Regions | | | | | | | | | | | | Summary | | History | |
|---|-------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|---------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Range | Avg. | Month | Last |
| Extracted honey sold bulk to Packers or Processors | | | | | | | | | | | | | | | | |
| Wholesale Bulk | | | | | | | | | | | | | | | | |
| 60# Light (retail) | 83.00 | 81.00 | 70.00 | 76.13 | 105.00 | 80.50 | 75.86 | 76.65 | 82.50 | 88.40 | 91.71 | 72.67 | 70.00-105.00 | 81.95 | 76.56 | 69.29 |
| 60# Amber (retail) | 81.29 | 72.59 | 68.00 | 75.90 | 75.68 | 76.50 | 76.75 | 69.67 | 90.00 | 78.00 | 88.40 | 52.50 | 52.50-90.00 | 75.44 | 70.51 | 65.43 |
| 55 gal. Light | 1.00 | 1.20 | 1.13 | 0.95 | 1.15 | 1.40 | 1.31 | 1.13 | 1.13 | 1.45 | 1.21 | 1.18 | 0.95-1.45 | 1.29 | 0.98 | 0.68 |
| 55 gal. Amber | 0.95 | 1.00 | 1.04 | 0.92 | 1.05 | 1.28 | 1.29 | 1.10 | 1.13 | 1.20 | 1.10 | 1.03 | 0.92-1.29 | 1.19 | 0.93 | 0.62 |
| Wholesale - Case Lots | | | | | | | | | | | | | | | | |
| 1/2# 24's | 32.87 | 32.52 | 31.10 | 32.79 | 31.10 | 27.50 | 29.59 | 31.10 | 31.10 | 39.96 | 24.00 | 25.00 | 24.00-39.96 | 30.72 | 32.94 | 29.25 |
| 1# 24's | 49.88 | 43.05 | 47.81 | 46.36 | 53.00 | 46.00 | 44.93 | 45.36 | 47.22 | 51.24 | 53.27 | 51.20 | 43.05-53.27 | 48.28 | 46.47 | 44.27 |
| 2# 12's | 44.95 | 39.65 | 44.04 | 46.88 | 44.04 | 40.00 | 41.94 | 42.33 | 44.20 | 38.40 | 45.00 | 45.33 | 38.40-46.88 | 43.06 | 43.40 | 40.41 |
| 12 oz. Plas. 24's | 44.09 | 37.52 | 37.24 | 36.05 | 32.00 | 42.00 | 38.21 | 32.46 | 39.84 | 42.36 | 43.50 | 40.60 | 32.00-44.09 | 38.82 | 38.17 | 38.25 |
| 5# 6's | 48.29 | 44.89 | 49.03 | 45.75 | 49.03 | 45.00 | 46.33 | 39.00 | 52.20 | 49.03 | 50.00 | 48.75 | 39.00-52.20 | 47.27 | 45.70 | 45.29 |
| Retail Honey Prices | | | | | | | | | | | | | | | | |
| 1/2# | 2.01 | 1.78 | 2.16 | 2.32 | 1.39 | 1.83 | 1.93 | 1.92 | 2.16 | 1.82 | 2.63 | 1.94 | 1.39-2.63 | 1.99 | 1.88 | 2.02 |
| 12 oz. Plastic | 2.52 | 2.52 | 2.95 | 2.59 | 2.48 | 2.50 | 2.46 | 2.41 | 3.32 | 2.49 | 2.78 | 2.45 | 2.41-3.32 | 2.62 | 2.57 | 2.29 |
| 1 lb. Glass | 3.19 | 3.07 | 3.37 | 3.22 | 3.21 | 3.25 | 2.87 | 2.79 | 3.66 | 2.95 | 3.35 | 3.25 | 2.79-3.66 | 3.18 | 3.02 | 2.72 |
| 2 lb. Glass | 5.58 | 5.01 | 5.24 | 5.68 | 4.57 | 5.25 | 4.77 | 4.99 | 6.41 | 4.31 | 4.81 | 5.59 | 4.31-6.41 | 5.18 | 4.91 | 4.34 |
| 3 lb. Glass | 7.33 | 7.73 | 7.54 | 7.66 | 12.00 | 7.00 | 6.23 | 6.79 | 8.00 | 7.40 | 6.39 | 7.74 | 6.23-12.00 | 7.65 | 7.18 | 6.26 |
| 4 lb. Glass | 10.00 | 8.09 | 10.27 | 10.21 | 10.27 | 10.00 | 8.75 | 9.54 | 10.27 | 9.58 | 13.00 | 13.00 | 8.09-13.00 | 10.25 | 9.62 | 8.40 |
| 5 lb. Glass | 10.53 | 11.11 | 9.05 | 11.34 | 10.00 | 10.00 | 9.04 | 9.95 | 9.05 | 5.69 | 10.60 | 12.49 | 5.69-12.49 | 9.90 | 10.45 | 10.36 |
| 1# Cream | 4.24 | 3.55 | 4.59 | 3.93 | 4.59 | 3.29 | 3.35 | 2.96 | 5.00 | 3.75 | 5.38 | 3.39 | 2.96-5.38 | 4.00 | 3.88 | 3.70 |
| 1# Comb | 5.10 | 4.16 | 5.20 | 4.60 | 5.20 | 4.33 | 3.99 | 4.45 | 5.20 | 5.00 | 7.25 | 4.63 | 3.99-7.25 | 4.93 | 4.77 | 4.55 |
| Round Plastic | 4.59 | 3.75 | 4.23 | 4.26 | 4.23 | 3.50 | 3.70 | 3.74 | 4.23 | 5.00 | 5.33 | 4.25 | 3.50-5.33 | 4.23 | 4.10 | 3.67 |
| Wax (Light) | 1.37 | 1.41 | 1.50 | 1.35 | 1.55 | 1.23 | 1.94 | 1.50 | 1.50 | 1.55 | 1.18 | 1.38 | 1.05-2.55 | 1.16 | 1.29 | 2.33 |
| Wax (Dark) | 0.93 | 1.05 | 1.40 | 1.10 | 1.32 | 1.07 | 1.72 | 1.50 | 1.00 | 1.32 | 1.12 | 0.80 | 0.95-2.00 | 1.03 | 0.96 | 2.03 |
| Poll. Fee/Col. | 44.25 | 39.40 | 34.00 | 35.33 | 30.00 | 41.00 | 40.17 | 35.00 | 41.56 | 41.56 | 47.00 | 39.33 | 30.00-47.00 | 39.05 | 37.36 | 39.77 |

RESEARCH REVIEWED

Explaining • Defining • Using

Steve Sheppard

"Evidence that fluvalinate can regain effectiveness against Varroa destructor."

The old saying goes .good things come to those who wait. One of the most exasperating recent problems facing beekeepers is the documented loss of effectiveness of fluvalinate (Apistan®) against some strains of *Varroa destructor*. The resistance of mites to fluvalinate, a pesticide that belongs to the class known as pyrethroids, first appeared in Europe and is now widespread in the United States. Resistant mites cannot be controlled by the application of Apistan® and beekeepers and regulatory agencies have scrambled to develop alternative control measures. In the U.S., temporary relief has come in the form of an emergency registration for another pesticide, coumaphos (Checkmite+®), belonging to the class known as organophosphates. Unfortunately, new strains of mites have been reported recently in the U.S. that are resistant to coumaphos and so we seem poised to watch history repeat itself. By the way – the above provides an excellent example of what has been termed "getting on the pesticide treadmill" i.e. when control of a pest relies on one compound, resistance develops within the pest and another pesticide must be ready to take its place. Overall, remaining on this treadmill to control pests inside beehives is a prospect that most beekeepers would rather not contemplate for the long haul.

So what is the good thing? Researchers in Italy, working with one of the early strains of fluvalinate-resistant *Varroa destructor*, found that the proportion of resistant mites declined following a period when the mites were not exposed to pyrethroids. In this work, Milani and Vedova (2002), examined mites

taken from seven apiaries in the Friuli region of Italy from 1997-2000. Fluvalinate had been last used in the apiaries in 1995, when resistant mites were detected in this area. To assay the mites for resistance, brood combs were taken from the apiaries and emerged mites were exposed to a defined amount of fluvalinate in treated capsules for 6 hours. They were then transferred to small dishes and monitored for survival over 48 hours. Controls were set up in the same way (but without fluvalinate) to provide information on natural mortality.

The results demonstrated a significant loss of resistance in the mite populations (known as *reversion*) over the sampling period. Survival of mites at the assay concentration of fluvalinate decreased by about 10 times over three years, from about 42% (range 19-66%) to 4.6% (1.3-7.8%). The authors estimated that 30 generations of mites took place during the three years to achieve the 10-fold decrease in resistance levels. They considered the rate of reversion from resistant to susceptible status to be rather slow, suggesting that the mechanism responsible for resistance to fluvalinate imparts little disadvantage to the mite. They report that in areas where brood is present in the colonies for a longer period than in Friuli (about eight months/year), the rate of reversion may be faster.

The take home message from this study – the authors conclude that in areas where strains of fluvalinate resistant *V. destructor* occur, assuming a tenfold decline of resistance over three years, treatments with fluvalinate could be effective if used every 4-6 years. This research provides an indication

that even in those mite populations where Apistan® has failed, the material could still be used occasionally, following an appropriate period of non-treatment. Such an approach is likely to succeed for coumaphos-resistant mites as well, although the research for this compound remains to be done.

A mite management strategy that rotates among available mite control chemicals could increase the number of years the chemicals remain effective prior to the appearance of resistance. This approach, when combined with an effort to reduce overall chemical use as much as practically possible through mite population monitoring (basing treatment decisions on actual pest levels), cultural practices and the use of bees that express increased mite tolerance, forms the basis for Integrated Pest Management (IPM). As has been shown clearly with other pests in agricultural systems, implementing an IPM approach provides the best hope for stepping off the pesticide treadmill. **EC**

Reference:

Milani, N. and G. D. Vedova. 2002. *Decline in the proportion of mites resistant to fluvalinate in a population of Varroa destructor not treated with pyrethroids.* *Apidologie*. 33: 417-422.

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Mark Winston



Clotted Cream

“You have to be an optimist to become involved with agriculture. I was reminded in Devon that beekeepers are like all farmers whose occasional funks are cushioned by their fundamental belief that the future will improve.”

I admit to an obsession with dessert. Chocolate is pretty good, but my most serious bad eating habit involves consuming any food containing clotted cream, a hybrid between butter and cream that must contain more calories per spoonful than any food on earth.

Thus, it was with keen anticipation that I traveled to the July 2002 Devon Beekeepers meeting in southeastern England. Devon is the home of clotted cream and Devon cream teas, a region inhabited by hardy cream-lovers whose arteries mysteriously remain unclogged despite extreme abuse.

The meeting was held at a local college in Seale-Hayne, halfway between Plymouth and Exeter. I knew that I was in serious cream country as soon as I walked into the dining hall. Displayed in a case on the wall was the cafeteria's Guinness Book of World Records trophy for producing our planet's largest sherry trifle in 1989, a contribution to dessert history that weighed in at a hefty 2,508 pounds.

The late 80s were the golden age for Seale-Hayne's caloric excesses. Next to the trifle award was a second Guinness trophy for the world's largest milkshake, a 70-gallon wonder, flavor unknown, that was creamed up in 1988. The college cooks have not have set any Guinness records recently, but I can affirm they have maintained their unabashed commitment to large portions of high-quality deep cream.

I occasionally emerged from my cream-induced stupor during the meeting to discover that all is not well with British beekeeping. Many of the usually exuberant beekeepers seemed deflated, depressed by a combination of the coldest, wettest Summer England had experienced in 40 years, confusion within the agricultural community after a series of disasters beginning with mad cow disease and crowned by last year's foot-and-mouth epidemic, and this year's appearance of Apistan-resistant *Varroa* mites in southeastern England.

The somber mood in Devon was particularly unsettling because this is a region of considerable historical importance to beekeeping, populated by an unusually dedicated and passionate group of beekeepers. Seale-Hayne is but a few miles from Buckfast Abbey, home of the iconic Buckfast bee originally bred by Brother Adam. This line of bees is still maintained by the Abbey according to the precise selection guidelines originally established by the world's first and only bee breeding celebrity.

The Devon Beekeepers Association also is one of the most knowledgeable, involved, active, and delightful local beekeeping groups in the world. Their members enjoy talking and arguing about the most subtle aspects of beekeeping as much as I revel in the fine points of Devon creameries. The Devon

beekeepers clearly are proud of their traditions and deeply value their links with each other.

Their collective sense of unease arose in part from last year's outbreak of foot and mouth disease, from which Devon sheep and cattle suffered severely. My drives through the Devon countryside with beekeepers were punctuated by their frequently pointing out sites where deep pits had been dug, animal carcasses burned, and the remains covered by layers of bulldozed farmland.

The communal pain from that agricultural tragedy continues to cast a long shadow over all farming in the United Kingdom, including beekeeping. The discovery that *Varroa* mites in some Devon colonies had become resistant to Apistan came at a bad time, with memories of foot-and-mouth still fresh. No one has suggested destroying most of Britain's bee colonies and starting again with fresh stock, but recollections of pyres of burning animals lighting up the night sky have left an uneasy legacy of uncertainty about just how bad things may get.

Devon beekeepers also are apprehensive about the future of the Buckfast bee, of which they are justifiably proud. Buckfast Abbey is experiencing a decline in new initiates that threatens the future ability of the Abbey to maintain its historical prominence in breeding queens and producing honey. The

Continued on Next Page

“Possible loss of the Buckbast bee, bad weather, resistant mites and major agricultural eruptions like hoof and mouth and loss of forage are challenging Devon beekeepers.”

Abbey is even considering the radical step of hiring someone from outside their community to manage their bee breeding and keeping.

A further problem worrying the Devon beekeepers is the ecological decline of the heather moors for which Devon is world-famous. These moors were created when the native forests were cut down for farming, and while this habitat is thus not natural it is still a landscape of unusual beauty to which the English are deeply attached.

It is not surprising that this ecosystem attracts attention and passion. Wild ponies roam the valleys, fog and mist cloud the landscape, broken by morning sun illuminating hills carpeted by spectacular vistas of heather blooming everywhere.

The integrity of this eerie ecosystem is endangered by over-grazing from the flocks reconstructed by farmers after the foot-and mouth epidemic, and by over-use from hikers who swarm the moors year-round. This year, the heather honeyflows that Devon beekeepers depend on were further threatened by horrendous Spring and Summer weather, adding to the deepening sense of impending beekeeping doom.

Perhaps the cruelest twist of fate is that the past Spring was a time of renewed optimism for many British beekeepers because of tainted Chinese honey. The British regulatory authorities discovered the illegal antibiotics streptomycin and chloramphenicol in loads of imported honey, and quickly banned the importation of all honey from China.

Chinese honey had made up 40 per cent of British honey consumption, so the sudden exclusion of Chinese honey created a titanic opportunity for British beekeepers to recapture market

share. Purchases of new equipment went through the roof this Spring in anticipation of filling this serendipitous vacuum. Then, terrible weather and resistant mites hit the scene, leaving beekeepers holding piles of unfilled boxes that still have to be paid for.

I had observed similar collective beekeeping depressions twice before, first 25 years ago among South and Central American beekeepers when africanized bees arrived, and again 15 years ago in Canada when our borders were closed to bee importations from the continental U.S. The Latin American and Canadian crises in confidence were similar to the current British angst in that beekeepers just didn't seem to be having much fun anymore, and had little hope that things would get better.

Things did get better, though. Beekeeping did almost disappear for a short time in some tropical regions, but our southern beekeeping neighbors soon learned to select gentler africanized bees and manage them appropriately. Today, beekeeping in Latin America has rebounded, and honey production has returned to or even surpassed pre-africanized levels.

Similarly, our once-depressed Canadian beekeepers developed innovative, creative ways to overwinter bees under intensely cold conditions. The high price of honey on world markets today has returned a sense of optimism to the Canadian beekeeping community. Meetings are once again populated by young and enthusiastic beekeepers replacing the previous challenged generation, a telltale sign that the future is bright.

I learned from these experiences that beekeepers are resilient, and while Devon beekeepers may have been in a collective funk last Summer, they

were starting to bounce back even during my visit. Joy in each other's company, a sense of history in a group proud of its heritage, and a deep love of bees and passion for learning every morsel about how to practice their craft were keeping them from terminal depression, and stimulating thoughts about how to have a better future.

The sun began to come out towards the end of their meeting, lifting hopes that perhaps there would be a bit of a honey crop after all. Talk percolated in the halls that maybe the resistant mites were a useful wake-up call, and that implementing more sustainable methods of mite control might be a positive outcome from what had first appeared to be a devastating problem.

A few leaders started to emerge during the meetings as well, with passionate speeches calling on the beekeepers to work together in supporting research for solutions to their management problems. Tea breaks perked up, with small clusters of impassioned beekeepers becoming re-energized about the future.

Perhaps it was the scone covered in clotted cream that was served by the catering staff at the last afternoon break that revived their communal spirits. Tasty it was, but I think their improved mood was inspired more by spending two days sharing their mutual enthusiasm for bees and beekeeping, and by the genuine affection and fellowship that was evident throughout the meeting.

You have to be an optimist to become involved with agriculture. I was reminded in Devon that beekeepers are like all farmers whose occasional funks are cushioned by their fundamental belief that the future will improve.

The word “optimism” is defined as “a tendency to expect the best possible outcome or dwell on the most hopeful aspects of a situation.” It could be a side effect of the clotted cream, but Devon beekeepers are optimistic at heart, and optimism has a way of becoming self-fulfilling. **EC**

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? DO YOU KNOW ?

Winter Preparation
Clarence Collison
Mississippi State University

The Winter months are an important time for the beekeeper as they begin making preparations for the coming year. Besides equipment repairs, and ordering equipment and bees, beekeepers are concerned with handling and marketing their hive products. It is also a time for the beekeeper to reflect on the past year and attend various types of bee meetings and workshops. Staying abreast of current happenings in the beekeeping industry is also important.

Besides learning more about honey bees, it is important for the beekeeper to become familiar with other relatives of the honey bee, as well. A number of wild bee species are becoming increasingly more important as pollination specialists.

Please take a few minutes and answer the following questions to find out how well you understand these important topics.

The first nine questions are true and false. Place a T in front of the statement if entirely true and F if any part of the statement is incorrect. (Each question is worth 1 point unless otherwise indicated).

1. ___ The alfalfa leafcutter bee, a superior pollinator of alfalfa grown for seed, is native to North America.
2. ___ Alfalfa leafcutter bees over-winter as hibernating adults.
3. ___ Stingless bees, like honey bees, belong to the family Apidae and are social insects.
4. ___ Alkali bees nests in hollow stems, straws, and bored wooden blocks.
5. ___ Apimondia is the International Federation of Beekeepers Associations.
6. ___ Male and female alfalfa leafcutter and alkali bees work together in constructing and provisioning each nest.
7. ___ Both Apistan Strips® and the formic acid gel formulation adversely affects drone production in colonies.
8. ___ Honey contains antioxidants.
9. ___ Female alfalfa leafcutter bees are more efficient pollinators than the males.

(Multiple Choice Questions, 1 point each)

10. ___ Stingless honey bees occur primarily in:
A. Australia
B. Africa
C. Central and South America
D. Europe
E. Asia
11. ___ Stingless honey bees belong to the following genera:
A. *Melipona*, *Trigona*
B. *Bombus*, *Apis*
C. *Xylocopa*, *Ceratina*
D. *Andrena*, *Osmia*
E. *Anthophora*, *Colletes*
12. ___ Alfalfa leafcutter bees normally live:

- A. 1-2 weeks
- B. 12- 14 weeks
- C. 8-10 weeks
- D. 18-20 weeks
- E. 4-6 weeks

13. ___ The European acaricide that contains (76% thymol, 16.4% eucalyptol, 3.8% menthol and 3.8% camphor) is known as:
A. Apitol™
B. Apilife Var™
C. Apistan™
D. Bayvarol Strips™
E. Folbex™
14. The powdered sugar technique is used for what purpose in a beekeeping operation. (1 point)
15. Name three advantages of stingless bees as pollinators. (3 points)
16. What information is required on the honey label of a 3 pound jar of domestic honey? (5 points)

In the last couple of years there has been a lot of interest in the Russian queens. (1 point each).

17. ___ The Russian queens that are currently available in the United States originated from the Primorsky Territory on Russia's Pacific coast. (True or False)
18. ___ The queens were imported into the United States because they were believed to be resistant to:
A. Tracheal Mites
B. Small Hive Beetles
C. *Varroa* Mites
D. Chalkbrood
E. American Foulbrood
19. ___ The importation of the queens, evaluation and development of the various Russian lines have been completed by the USDA ARS Bee Laboratory at Beltsville, MD. (True or False)

Answers on Next Page

?Do You Know? Answers

1. **False** The alfalfa leafcutting bee, like the honey bee, is an introduced species to North America, and this introduction likely took place sometime during the 1930s.
2. **False** Alfalfa leafcutter bees are easy to manage because they like to nest in natural or artificial cavities, if they are an acceptable diameter and depth. Females construct individual nests, composed of a linear series of brood cells separated by cut-leaf partitions and provide them with pollen-nectar provisions. After laying an egg on the pollen-nectar supplies in each cell, no additional parental care is provided. The egg hatches, larva feeds and overwinters as a prepupae. The female bee emerges from May to July depending on location, mates, and immediately searches out a nesting site.
3. **True** The stingless bees are members of the family Apidae and are social insects. Some species have clusters of as many as 80,000 individuals; other species less than 100.
4. **False** Alkali bees are a highly gregarious solitary bee that nests in large numbers in saline soils with a silt loam or fine sandy loam texture. They may construct 100,000 or more nests in an area 40 by 50 feet; as many as 100 nests per square foot of soil. The nest, a pencil-sized vertical tunnel, may extend 10 inches below the surface but is usually only 3 to 5 inches deep. There may be 15 to 20 cells usually arranged in a single comb-shaped cluster. The soil removed from the tunnel is dumped at the tunnel entrance to form a conical mound 2 to 3 inches across.
5. **True** Apimondia is the International Federation of Beekeepers Associations. It is an organization that promotes the business of beekeeping internationally. Every two years
6. **False** Male alfalfa leafcutter and alkali bees emerge before females and their primary function is to mate with the females. Only females construct nests and provision them with a nectar/pollen mixture and determines the sex of the progeny by laying either fertilized or unfertilized eggs.
7. **True** Research has shown that both Apistan® and Formic acid treatments have negative effects on drone production in honey bee colonies. Significantly fewer of the drones that emerged in colonies treated with Apistan® were alive after one day Apistan® treatments also had small negative effects on the weights of drones and on the weights of their mucus glands. Formic acid treated colonies removed drone eggs from combs and delayed much of their drone production. The treated colonies produced less than half as many drones as untreated colonies. Formic acid treatments also reduced adult drone survival.
8. **True** Recent studies have suggested that honey may have great value to health conscious individuals. Honey contains trace amounts of a wide variety of essential vitamins, minerals, amino acids, and antioxidants. The antioxidant activity of honey varies by floral source. Generally, the darker the honey the greater the antioxidant activity.
9. **True** Female alfalfa leafcutter bees are more efficient pollinators than the males. Females visit flowers in rapid succession, tripping almost every flower visited, 11 to 15 per minute. The male visits flowers for nectar only and seldom trips a flower.
10. C) Central and South America
11. A) *Melipona*, *Trigona*
12. E) 4-6 weeks
13. B) Apilife Var™
14. The powdered sugar technique is used to sample colonies for *Varroa* mites.
15. Stingless bees do not sting, therefore they are not a hazard to man or animals nearby. They collect and utilize considerable nectar and pollen throughout most of the year, therefore, numerous flowers must be visited and pollinated. They can be manipulated in hives like honey bees. The hives are small, easily handled, relatively inexpensive. The colony is unlikely to become hopelessly queenless. The products of honey and wax are usable.
16. The word "Honey" must appear in bold type (1 point)
Name and address including zip code of producer or packer (2 points)
Net weight in both pounds and ounces (2 points)
17. **True** The Russian queens that are currently available in the United States originated from queens that were imported from the Primorsky Territory on Russia's Pacific coast. This far-eastern area of Russia is within the natural range of *Apis cerana*, the original host of *Varroa* mites. European honey bees were first moved into this region in the last century, so has had a long association with the *Varroa* mites and the best opportunity for developing genetic resistance to the mite.
18. C) *Varroa* Mites
19. **False** The importation of Russian queens, their evaluation and development of several breeding lines, has been done by scientists at the USDA ARS Honey Bee Breeding, Genetics and Physiology Laboratory in Baton Rouge, LA.

There 25 points in the test this month. Check 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

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Apimondia 2001

Becoming A Better Beekeeper

Malcolm T Sanford

Beekeepers have always been inventors. I remember a day in 1979 when I saw the original "Stoller Frame Spacer" machine in Latty, OH. It was and is human powered, and "one of a kind." This machine, I imagine, is still pumping out these spacers, which find their way into catalogs. I saw the spacer machine in conjunction with many other inventions of the original Mr Stoller, who had passed away by that time. One was a machine gathering dust in the corner. No one in the family knew what this contraption was designed to do; the idea died with the inventor.

Given the history of beekeepers as innovators, it is no surprise that technical beekeeping inventions figure high in every Apimondia Congress awards ceremony. The South African gold medal went to the Multibox®, billed as a revolutionary way to transport honey bees. Anyone who has been shipped honey bees in the traditional wooden packages with wire-screened sides will appreciate the possibilities of this all-plastic cage, developed in conjunction with the University of Zagreb (Croatia) and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), a German-government-owned corporation for international cooperation with worldwide operations in more than 130 partner countries.

Many of the advantages of this plastic package are listed on the Multibox web site www.multibox.cro.net/ It is reusable, and because it is plastic, can be disinfected, being resistant to acids and lye (potassium hydroxide). It comes with a built-in plastic feeder, which is far more robust and less prone to leak than the traditional tin cans with holes punched in their lids. Perhaps most important, though, is that the cage

can be disassembled while not in use and takes up six times less space than when assembled. Both the disassembled box and its feeder come packed in their own separate cardboard boxes. The Multibox is a cube with six equal-sized plastic grills or "plates" that are joined at their edges by inserting stiff wires. Individual units can also be stacked together, separated by spacers to provide ventilation.

The silver medal was awarded to the *Varroa* detection device designed by K. Fakhmzadeh, which employs centrifugal force to separate mites from bees. A further description of this invention and the studies surrounding its use are found on the World Wide Web www.mainebee.com/reports/fieldtest.php. "Bees and a shaking solution were placed in a rotating chamber. Attention was given to the consistency of the load (bees and liquid) during experimentation to

have a steady rotational speed, consequently a constant centrifugal force. Four rotational speeds (6342, 5718, 5076 and 4752 rpm.) were examined for 10, 30 and 60 seconds. In a preliminary research the cheapest and most efficient liquid was found to be a solution of detergent which has no hazardous side effects. Washing detergent (Leijona) and water was used."

Third place went to a South African for a beehive scale that was connected to a cell phone. This is the latest concept of an idea that has been around a while. I reported on it from France back in 1997 in conjunction with a visit to a beekeeper near Aix-en-Provence, who connected his hives to a computer and the resultant weight was transmitted to a screen in his workshop at some distance from the beeyard, perso.wanadoo.fr/cl.iver/preneu.htm. Real-time monitoring of honey bee colonies continues to

Continued on Next Page



Multibox display at Apimondia 2001.

be a focus of Dr. Jerry Bromenshenk's innovative research program at the University of Montana, beekeeper.dbs.umt.edu/bees/science.htm. It is also part of the Australian research program described below in using a technique known as "remote sensing."

As noted elsewhere in this report, there is a standing Commission on Beekeeping Technology and Equipment. Several symposia were presented in this area, including those on honey quality, appropriate technology for professionals and enthusiasts, application of pheromones, and queen production and management.

Investigating Bee Products

Honey quality is a function of many aspects. Just how variable honey is as a product can be discerned in a study by M. Mouteira and colleagues from Argentina's Buenos Aires province, which produces more than 70,000 tons of honey/year. Some 262 honey samples for the years 1997 to 2000 were analyzed. The results showed values of (hydroxymethylfurfural) HMF between 0.1 and 33.2 mg/kg, moisture content between 13.4 and 23.6 %, and pH between 3.1 and 5.5. The ash content was between 0.011 and 0.600 %, the color varied between 1 and 126 mm on the Pfund grader, while free acidity was between 9.3 and 36.3 meq/kg.

A.J. de Jager and colleagues in South Africa studied the effect of propolis production on bee colonies. The authors observed that the introduction of a propolis trap (flexible plastic grid) into the hive increased the amount and quality of that material produced. The findings of the study are in agreement with others that the cleanest collection methods employ special traps placed on top of the hive, below the covers or next to the lateral walls inside the hive, resulting in less contamination of

propolis with wax, pieces of wood, paint and other debris. A greater diversity of plant growth, according to the authors, also influences the chemical composition and quality of propolis collected. The amount of honey produced increased along with propolis, and hive size was not affected over the period. Thus, the authors conclude that commercial propolis production appears to be a viable practice in the southern Cape for the commercial beekeeper as total hive income increased substantially without affecting productivity.

E. Marconi and colleagues from the University of Molise, Via De Sanctis, 86100 Campobasso, Italy reported on using furosine to assess the freshness of royal jelly. According to the authors, Furosine, produced by the hydrolysis of -N-

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deoxy-ketosyl-lysine (first stable compound of the Maillard Reaction), is the most suitable marker for evaluating storage conditions of different foods such as milk, mozzarella cheese, pasta, eggs, tomato products. The objective was to monitor furosine levels in freshly-harvested royal jelly, during a storage period of 12 months both at 4°C and at room temperature. The furosine amount increased rapidly from 40 mg/100g protein to 500 mg/100g protein after 12 months of storage at room temperature, while it was constant when royal jelly was stored at 4°C. The results suggest that the material is an appropriate index to monitor the quality and the freshness of royal jelly. Investigation of commercial royal jelly products associated with this study showed a range of furosine from 40 to 120 mg/100 g protein.

Apis Bees in India: New Technology

It is not often that *Apis mellifera* is identified as an introduced or "exotic" organism, but this is in fact the case in much of its current geographic range. And when the western honey is so considered in a country where it likely has its evolutionary roots, it is passing strange. But this is the case in India, where the native honey bee is *Apis cerana*. An epidemic of a disease called "thai sacbrood" has literally wiped out ninety percent of *Apis cerana* beekeeping, according to Daisy Thomas and colleagues from the Central Bee Research and Training Institute (CBRT), Khadi and Village Industries Commission, 1153, Ganeshkhind Road, Pune 411016. The ravages of this disease resulted in *Apis mellifera* being introduced into southern India as a replacement, whereas before it had been mostly confined to the north. To revive *Apis cerana* beekeeping, CBRT are focusing on simple hygienic management practices to check further spread of TSBV disease, stock development with resistant colonies and training.

Another species of honey bee, the giant *Apis dorsata*, also exists in India and is coming under considerable pressure due to unsustainable depredations of honey hunters. New technology, however, is also making itself known here. One is a "bamboo clip" that can be attached to the single comb just above the brood. This stabilizes the comb and allows the top part with the honey to be removed with a sharp knife, leaving the lower brood section in place. The bees then rebuild the upper part of the comb. Another is the use of top-bar technology adapted to another bee. Beeswax wooden planks are attached under tree branches. Migratory swarms of *A. dorsata* are attracted by the wax odor and build their single nest suspended from these planks. The planks with their attached comb can then be moved,

even in some cases used to transport the giant bees for pollination purposes.

Residues and Their Analysis

Two papers addressed residue analysis of tetracycline (antibiotic) in honey. R. Petkov and S. Basheva of the Central Veterinary Research Institute, Sofia, Bulgaria indicate that by using the thin layer chromatography (TLC), tetracycline residues of honey in the range of 0.1-1.0 mg/kg can be detected. Best results are obtained when the honey samples are eluted in a mixture of methanol:ethylacetate (5:95). A good separation of tetracyclines can be achieved by development of thin layer chromatographic plaques in the liquid phase of chlorophormium:methanol: 5% water solution of Na₂EDTA (65:20:5). An Argentine study by C. Libonatti and colleagues also discussed a Technique for detecting oxytetracycline in honey using high performance liquid chromatography (HPLC).

Franco Mutinelli and associates discussed European Legislation on veterinary products. A new system for licensing of medicinal products has been adopted by the European Union Council of Ministers. It is administered through The European Agency for the Evaluation of Medicinal Products (EMEA) in London. This legislation allows use of formic acid, lactic acid, acetic acid and oxalic acid, as well as menthol, thymol, eucalyptol or camphor for *Varroa* mite control, and also provides a basis for labeling honey from hives so treated as "organic." Latest information on pharmaceuticals under this legislative mandate are found on www.pharmacos.eudra.org/F2/home.html. This is more relevant with each passing day as contamination by certain antibiotics is receiving more attention by regulatory agencies www.cnn.com/2002/US/08/28/contaminated.honey/index.html.

South African Honey Flora

I would not be fitting to leave South Africa without a mention of its unique honey-producing plants. The Davyana aloe, according to a presentation by J. Williams, is the

country's most interesting honey plant. It blooms in winter and produces a light, mild honey that crystallizes rapidly. The honey yield is low because the flower's corolla is long, which means bees can't get to all the nectar available. There is so much pollen that bees build up to huge populations that swarm, thus, beekeepers used to split colonies in the aloes on purpose to create artificial swarms. However, the capensis "problem," mentioned earlier means that this is no longer satisfactory because this technique encourages takeovers by pseudoqueens. The aloes are in trouble, being overrun by development. If the tide doesn't turn soon, they could literally disappear. www.gisa.co.za/pages/library_archive/aloext.htm.

At the foot of the escalator leading to the main auditorium in Durban was a huge bouquet of proteus flowers. These were from South Africa's Cape region, an area known simply as fynbos, www.botany.uwc.ac.za/envfacts/fynbos/. These plants are readily recognized by their sclerophyllous (hard, tough and leathery leaved) and microphyllous (small leaved) nature, which allows them to be easily dried and made into almost permanent ornamental arrangements. The honey from fynbos is dark and full-bodied, and commands a premium price, users.mweb.co.za/e/ef/efsa/biocraft/. The flowers include proteas, ericas and members of seven plant families found nowhere else in the world. The word fynbos comes from the Dutch for fine-leaved plants. Fynbos plants include the King Protea, South Africa's national flower, the beautiful Red Disa, symbol of the Cape Province and the popular garden plants, pelargoniums, commonly known as geraniums. Although not under as much pressure as the aloes, the plants of the fynbos are also accorded legislative protection.

Like many places the world over, there has also been introduction of plants from other parts of the world into South Africa. D. Kleyn and associates discussed the problem of weeds and invaders, most especially the Eucalypts (several species of this genus are on the list

of South Africa's invasive plants in categories 1 to 4). As elsewhere in the world, these plants have the potential of creating conflict between beekeepers and land managers in South Africa. Although tremendous honey plants (they produce little pollen usually), Eucalypts are notorious for their invasive behavior, which can cause catastrophic reduction of native plants. In some places like Florida, they are blamed for causing human health problems, drying up wetlands and becoming prime tinder for devastating forest fires. Beyond *Eucalyptus*, several plants in the genus *Acacia* have also been declared noxious weeds in South Africa, as has that valuable honey plant, native to North America, but now found in many places on earth, *Robinia pseudacacia*, the black locust apis.ifas.ufl.edu/apis97/apjun97.htm#4. This phenomenon of identifying introduced plants, once thought to be ornamental and/or benign, many valuable nectar resources, as "noxious weeds," will be a topic of more and more relevance in the future to the world beekeeping community.

This brings to a close my report on the 37th International Apicultural Congress. It has taken almost a year to get it into the pages of *Bee Culture*. Meanwhile, the next congress rapidly approaches. I am already in receipt of the Second Circular for Apimondia 2003 to be held in Ljubljana, Slovenia, August 24-29 www.apimondia2003.com/. I received one bit of feedback from a colleague who I met in Durban and later was able to talk with at the Eastern Apicultural Society (EAS) in New York. He asked me how I was able to provide the depth and quality of information presented in this series or articles. As I said in my first installment: "So it is my fervent hope that some form of acknowledgement that I have accomplished my objective will be communicated to the secretary (editor), keeping the Mission Impossible demons at bay." ☐

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Queen Quality

Genetics For Disease Resistance

Stu Jacobson

We have enough information on disease resistant honey bees to make better choices about which resistant lines to choose and how to find them.

The past decade has seen a rapidly growing interest in breeding disease-resistant or -tolerant honey bees. Recent evidence of antibiotic or miticide resistance in disease organisms has increased the need to develop lines of honey bees with genetic resistance to common diseases. In addition, beekeepers' continued reliance on drugs and selective pesticides has raised valid concerns about these chemicals occurring in honey. Concerns about the purity of honey have the potential to do more economic damage than the diseases we are treating.

The increasing interest in disease resistance has created a growing mountain of material regarding "resistance to *Varroa*," or "breeding for hygienic behavior," etc. Surveys of beekeepers in Illinois and Indiana have shown a good deal of interest in disease resistant stock. At the same time, surprisingly few of these beekeepers were using resistant lines currently offered by producers (unpublished data). Perhaps for that reason a minority of producers offer disease resistant queens. For example, in the March, 2002 *Bee Culture*, only seven out of 32 Queen Producer ads offered queens of lines documented as resistant. This article is intended for those beekeepers who find it difficult to evaluate the information on disease

resistant honey bees from a variety of sources. The article is a starting point. It summarizes available data on five lines of honey bees resistant to one or more diseases. The diseases include Varroaosis and Acarosis, caused by the



New World Carniolan queen which mated in an area dominated by Italian drones, which are probably not disease resistant.

parasitic mites *Varroa* and tracheal mites respectively as well as American foulbrood (AFB), chalkbrood, and Nosema. This article uses the terms *Varroa*, tracheal mites (HBTM), and Nosema to refer to the diseases caused by

the organisms of the same names.

Before continuing, several points need to be emphasized. First, most beekeepers recognize that the highest quality queens possess superior genetics for honey production, disease resistance and other important traits. However, in order to realize their genetic potentials, the queens also must be reared under optimal conditions, which include super abundant amounts of food, the absence of organisms such as Nosema and HBTM, and minimal to zero exposure to miticides. It also follows that genetically superior queens cannot realize their full potential if they have been banked, shipped or introduced under less than optimal conditions. Second, it's also important to remember that resistance to a given disease is rarely absolute. Beekeepers who expect total resistance to a given disease are going to be disappointed. Poor beekeeping practices and other environmental stresses may cause colonies to contract diseases they are supposed to be able to resist. However, use of resistant lines along with other Integrated Pest Management practices, should allow beekeepers to rely on fewer synthetic chemicals in order to maintain healthy colonies.

Another point is that beekeepers often generalize about lines of bees based on inadequate experience. For example, when

Russian queens were first available, some beekeepers had problems with acceptance of these queens. Having no previous experience with this line, they assumed that the Russian queens wouldn't adapt to "American" honey bees. In that case, they surely confused the Russians' genetics with poor queen quality due to environmental factors, possibly shipping conditions. In my experience, beekeepers most often rush to judge lines of bees which are not Italian – the most common type of bees advertised in bee journals. This kind of "bee racism" gets in the way of making informed choices regarding the best available honey bee stocks for a given situation.

Table 1

Table 1 lists five commercially available lines for which there is evidence of resistance or tolerance to one or more disease causing organisms. Somewhat similar tables are used to compare different breeds of cattle or other livestock for traits like "weaning weight," "growth rate," etc. (Unfortunately, we know much less about honey bee lines.) The table represents an initial effort, intended to stimulate additional thought and further discussion. It borrows from and modifies a system commonly used in seed catalogs. These catalogs often list one or more capital letters after the name of a tomato variety which indicate resistance to specific diseases. For example, take the variety of tomato, Biggest Boy FN: the letter F stands for resistance to Fusarium wilt; N indicates resistance to nematodes. In Table 1, lower case letters are used to indicate resistance to specific disease organisms of honey bees. The letter v, for instance, indicates partial resistance to *Varroa*; t to tracheal mites, etc. Two of the same letter (e.g., vv) indicate a higher or significant level of resistance for a particular disease.

The lines listed in Table 1 were chosen using several criteria. First, they had to be readily available from commercial queen producers in the U.S. The Weaver Buckfast line is a bit of an exception, since it is available from only two queen producers. (However, Buckfast stock

is also available from producers in Canada. Ed.) Second, queens of each line had to come from the same breeding program. In other words, Russian or SMR queens from one queen producer should be genetically similar to queens from another producer. In contrast, Italian queens from different producers may not be closely related at all. Third, there had to be documented evidence of resistance to one or another of the diseases listed in Table 1. By this I mean in most cases quantitative data from published articles or at least websites. For example, there is good evidence of at least partial resistance to *Varroa* in the Suppressed Mite Reproduction (SMR), ARS Primorsky (Russian) and Minnesota Hygienic (MHYG) lines¹. Further, the hygienic behavior of Russian and MHYG bees confers at least partial resistance both to *Varroa* and to brood diseases. This latter information as well as descriptions of the Russian, SMR and the MHYG lines, can be found at the Glenn Apiaries informative website². This website is a useful resource on honey bee genetics.

Table 1 also lists three lines as resistant to tracheal mites: Russian, Buckfast and New World Carniolan (NWC)^{2,3}. Sue Cobey, the

administrator of the NWC line at Ohio State, also selects for hygienic behavior and eliminates those few colonies infected with Nosema or chalkbrood from her breeding program⁴. In the absence of published or other substantiated evidence of resistance, I left the relevant "squares" blank. That doesn't mean that SMR or MHYG bees, for instance, lack resistance to HBTM. It's just that I couldn't find published evidence of such resistance. Obviously, there is a subjective component to the information in Table 1 and room for disagreement. While I have at least some experience with each line in Table 1 except the SMR line, I have not systematically evaluated them for disease resistance or other traits, which would be a major undertaking.

Since I am a northern beekeeper, and cold or cool weather can increase problems with both HBTM and Nosema, I also added a column indicating resistance to northern Winters. In the absence of published comparative studies, I decided to rate lines as moderately to significantly resistant to Winter cold which have been selected and bred under northern conditions, such as the New World Carniolans, or those which evolved over a lengthy period in a cold climate,

Table 1

Overview of genetic resistance to two mite species, several diseases and winter cold in five commercially available lines of honey bees. A single letter (e.g., v) indicates partial resistance to a specific disease; two of the same letter (e.g., tt) indicate moderate to significant resistance.

| Honey Bee Line* | Resistance to Diseases and Winter Cold | | | | | | Resistance Summary |
|-----------------------------|--|----------------|-----|-------------|--------|-------------|--------------------|
| | Varroa | Tracheal Mites | AFB | Chalk Brood | Nosema | Winter Cold | |
| Buckfast (Weaver) | | tt | | | | w | tw |
| Minnesota Hygienic | v | | f | c | | w | vfcw |
| New World Carniolan | v | tt | | c | n | ww | vttcnww |
| Russian (Primorsky) | v | tt | | | | ww | vttww |
| Suppress. Mite Reproduction | vv | | | | | | vv |

* The degree of resistance is based on colonies "purebred" for a specific line. The exception is the Suppressed Mite Reproduction (SMR) line, which is primarily for out-crossing to other lines.

Questions to Ask Queen Producers or Breeders*

A. For producers of a resistant line who use breeder queens from a breeder:

1. Where do they buy the breeder queens of the line(s) you are interested in?
2. What line(s) are their drone mother colonies? About what proportion are disease resistant?
3. How close are their mating yards to other producers, and what types of drone mother colonies are predominant in the area? For example, about 90% Italian; 70-80% Minnesota Hygienic, etc.

B. For breeders who select and produce breeder queens supplied to queen producers:

1. How many hives are used in selection of a specific disease resistant line? (Less than forty would indicate a less than serious selection program.)
2. & 3.—ask the same questions above which apply to queen producers.
4. How do they test for specific types of resistance?
5. How do they maintain the purity of their lines? Instrumental insemination of breeder queens is very important. Drone mother queens out of breeder queens can be naturally mated.
6. If their breeder queens aren't instrumentally inseminated, what other means do they use? For example, mating yards which are isolated and surrounded by a large number of drone mother colonies of resistant bees.

* Many queen producers are also breeders of their own lines of honey bees

such as the Russians. The Weaver Buckfast line, originally developed under cool-cold Winter conditions, received a lower rating since it has been bred in south Texas for decades. In the absence of good comparative data for "Winter resistance," these are clearly judgment calls.

How to Use the Information

In Table 1 the degree of resistance assigned to each line is based on that of colonies which are "purebred" for that line. The exception is the Suppressed Mite Reproduction line, which is intended for crossbreeding with other lines and performs poorly in purebred colonies due to their lower reproductive rate⁵. However, it should be kept in mind that almost all commercially available queens are out-crossed with drones from other lines or races. This is due to the fact that honey bee queens mate away from their home yard with a presumably random assortment of up to 20 drones⁶. In most queen producing operations these drones will be from non disease resistant lines, since that's what most of queen producers sell.

Remember, it's primarily the worker bees which express disease resistance, and they get half of their genes from their fathers. So, in searching for the most resistant stock, it makes sense to buy disease resistant queens from a producer whose drone stock is predominantly resistant as well. Producers can strive to isolate mating yards from those of other producers. And, they can flood the area with drone mother colonies of resistant lines. Since many producers sell two or more types of queens, you should find out what lines make up the majority of drone producing colonies.

Depending on the parent lines used, there may be important advantages to crossbred bees. These aren't technically hybrids – a term usually reserved for controlled crosses between inbred lines⁶. Most commercial beef cattle, sheep, or hog producers depend on crossbreds because they have heterosis or "hybrid vigor," resulting in more rapid growth or better resistance to stresses than do purebreds. However, some breeds combine better with a specific breed than with others. Table 1 provides information which can help you to choose optimal crossbred honey bees based on their resistance to diseases, assuming you can find them. For example, SMR queens mated with Buckfast, NWC or Russian drones might be a good choice; the offspring should possess at least partial resistance to both

mite species. The gene(s) for resistance to tracheal mites appear to be dominant². This means that queens from a HBTM resistant line should have worker daughters which are just as resistant to this mite, no matter which type of drones they mated with. In contrast, there is some indication that the genes controlling hygienic behavior are recessive². This means that hygienic queens mated with non-hygienic drones *would not produce hygienic daughters*. However, in one study colonies headed by hygienic queens mated with unselected drones showed hygienic behavior and lower levels of both *Varroa* and chalkbrood than non-hygienic colonies⁷.

If you are serious about acquiring disease resistant stock, look over Table 1 and then read queen producers' ads. Then it would be a good idea to call and ask them a series of questions such as those in the box, to find out if any are producing the type of bee you desire, or at least close to it. If they are concerned about selling you the most disease resistant stock, they should be able to answer your questions readily. Better yet, perhaps they already have the information on a website for those with Internet access. By asking questions regarding disease resistance, you are telling the producers that you are interested in these traits. If enough of us do this, then we should expect to see more producers selling disease resistant queens.

The advent of disease resistant lines of honey bees provides niche market opportunities for forward thinking queen producers. Those who can locate their mating yards away from large scale beekeeping operations have an opportunity to produce queens from disease resistant stock which are mated primarily with drones from the same stock or another disease resistant line. Instrumentally inseminated queens of Russian, SMR and Minnesota Hygienic lines can be purchased from Glenn Apiaries at reasonable cost². These breeder queens will produce purebred, disease resistant daughters. A queen producer can select the best colonies headed by naturally mated disease resistant queens for drone

mother colonies. The latter will provide purebred drones to mate with the breeder queens' daughters. For example, a queen producer could maintain Russian drone mother colonies and use breeder Russian or MHYG breeder queens. This would provide customers the choice of purchasing queens of a dark line and of an Italian type line. I think it is fair to say that currently very few commercial queen producers are selling such disease resistant stock, although many could do it if enough beekeepers expressed sufficient interest.

There are breeders who are developing or have developed disease resistant lines not listed in Table 1, as was made clear to me by one of those breeders who read a short version of this article. Hopefully, most of these breeders will soon provide information documenting the disease resistance of their bees on websites or by other means. For example, what is the percent of their colonies which test hygienic, or are resistant to HBTM? And, how can they prove what they say? It's not enough to state "we are selecting for resistance to *Varroa* and for hygienic behavior." How are they selecting for these traits? How many colonies are they selecting from, and what method are they using? If they're not utilizing at least 40-60 colonies in a systematic breeding program with breeder queens maintained by instrumental insemination, then their selection will be relatively slow and less effective⁶. If you desire disease resistant bees, and they can't answer the questions in Table 2 to your satisfaction, then I would look elsewhere. At the same time, you should be willing to pay more for truly resistant stock.

Disease resistance loses much of its value in lines of bees which are not productive or are highly defensive. In addition, lines which are narrowly bred for resistance to one disease might be quite susceptible to a different one common in your area. In recently developed lines, such as Russians or SMR bees, there also may be considerable variability, although the SMR line is quite inbred. For instance, last year we saw variability in queen color, from light to dark, as well as in worker

"Be willing to spend more, mark new queens, keep records, and ask questions."

behavior, among 14 colonies headed by Russian queens. Three of these Russian colonies were highly defensive, even as three-four frame colonies they could have given the jitters to nucs of African bees I worked with in Venezuela. In fact, as a form of apiary security, we moved them to a new beeyard where we were unsure of potential problems, hoping that wandering cows or vandals would encounter the Russians first. This doesn't mean I would not order Russian queens again - in fact I have. With further selection and instrumental insemination of breeder queens, defensive behaviors can be eliminated while retaining and enhancing positive qualities which the Russian bees possess.

Hopefully this article has helped to give you a better idea of which lines are resistant to specific diseases. Using the information in Table 1, you can examine queen producers' ads and find the types of queens which possess the traits you desire. There is no one superior type of honey bee for all situations. And disease resistance is just one type of trait which needs to be considered in obtaining the best line for your operation. In many cases it will pay to order more than one line of queen to compare which performs best for you. Find out and keep a record of which types of drone your queens may have mated with. (Hopefully they too are disease resistant.) Be willing to spend more for good genetics. Mark your new queens, maintain good records, and keep in

mind that disease resistant queens which were reared, shipped or kept under sub-optimal conditions cannot demonstrate their full genetic potential.

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BETTER MANAGEMENT With Screens & Trays

Serge Labesque

Whether commercially made, like this one, or homemade, using a screen and tray correctly will make you a better manager.

Screened beehive floors are mentioned increasingly often in beekeeping literature. Some are simple floors of hardware cloth that allow mites and hive debris to fall through to the ground. Others are relatively sophisticated pieces of equipment. They may permit not only the detection or trapping of pests such as *Varroa* mites, but also the observation of hive activities and the easy introduction of various substances into the hive. In using the latter types of screened floors, beekeepers are provided with helpful information that leads to educated beehive management decisions and, in some cases, the means to implement these decisions.

From Solid To Screened –

It was Springtime and the six beehives we were keeping in our home apiary were looking great. Bees were flying in and out of the entrances, and it was a real delight to watch the activity on and around the landing boards. The sight of those strong and healthy colonies at the beginning of the honeyflow was already a reward! Everything had been done right, “by the book.” This was undoubtedly the result of good and successful beehive management, or so we thought

Unfortunately, a few weeks later, in the midst of the honeyflow, this picture changed dramatically. Our self-addressed congratulations turned into a bundle of questions, mixed with anxiety, as we watched the steady decline of our colonies. We were now looking at five moribund beehives and one that was making swarm preparations. What had happened? What was going on here?

My first thought was to insert a sticky board in the bottom of one of the beehives. These devices had been mentioned in beekeeping magazines a few times, and one was shown in the catalog of a beekeeping equipment company. The idea of trying them had been appealing to me, but I had not yet acted upon it. Now was the time to find out what could be gained from this tool. I decided to try using a simple plate of one-eighth inch doorskin (left over from a past home improvement project) coated with vegetable shortening from our kitchen. I inserted it under a screen of eight-mesh wire cloth which I had placed between the traditional bottom board and the lower hive body.

The next day, when I removed the sticky board, I could see that, amid the debris, there were *Varroa* mites, literally hundreds of them! In spite of routine treatment with Apistan® strips, our hives were infested by the pest, and collapsing. Quite a few of the mites were obviously alive, wiggling their legs or even walking on the layer of matter that had fallen from the hive. Without opening the beehive, I was already obtaining some clues as to what was going on inside it, and live mites were also being removed from the beehive. I was impressed by the simplicity and effectiveness of the screened floor and sticky board.

A search on the Internet showed that some European researchers were using similar hive bottoms

Manipulations of the tray from behind the beehive are easily done out of the bees' flight path.

Molded plastic trapping tray and screened bottom.



to detect and estimate the mite population in their colonies. Accompanying pictures illustrated that they could remove the sticky boards from the back of the beehives. The trays were also used to introduce a variety of substances into the hives and to study their effects on mites.

I became intrigued by this idea. So, the next weekend I built several screened bottom boards of different configurations. These were no longer crude makeshift inserts between the traditional bottom boards and the hive bodies, but screened bottoms in their own right with removable plates or trays. The screened floors I constructed were similar to those I had seen on the Internet in that the trays could be slid out of the back of the hives. This feature is important because it allows access to the tray at any point in time, without disturbing the bees or interfering with their flight path.

The sticky board -

I brushed a nice coat of vegetable shortening on the surface of the boards before inserting them in the screened floors. Then for the next several months, I monitored and recorded the mite fall almost every day. Drawing gridlines on the boards made the task of counting the mites easier. After counting the mites and recording anything else that might be observed on the board, I used a wide putty knife to remove the greasy coating and the debris in one quick sweep. This mixture was kept in a can. When the can was full, I placed it upside down in a solar wax melter, above a funnel that contained a piece of fabric and an empty can to strain the shortening. That way, the shortening was separated from the debris and could be re-used many times.

The surface of the boards can be made sticky with a variety of ingredients besides shortening, such as petroleum jelly (Vaseline®) or adhesive film. However, these are not food grade substances and they need to be replaced frequently.

From Monitoring Board to Trapping Tray -

Depending on the strength of the colony and its activities, the surface of the board may have to be cleaned and re-coated every other day. In particular, when a super full of drawn combs is placed on the hive, the bees produce a large amount of debris as they clean it. Occasionally a continuous layer of matter, sometimes more than one quarter of an inch thick may accumulate in a single day. Obviously, when this happens, the sticky board becomes ineffective. Leaving the screened floor open, without a board, is not a good option in areas where the temperature and humidity fluctuate widely between daytime and nighttime. These variations can be stressful to the colony. Some of the brood will be lost and the worker bees trying to regulate the microclimate of the brood chambers will consume more honey. In addition to this, when the bees cluster more tightly because of the cooler temperature, fewer *Varroa* mites fall through the screen. Thus, some of the element of control over the pest is lost. On the other hand, the screened floor may be left open in climatic zones where the daily temperature varies only slightly or gradually, or when additional ventilation through the screen is beneficial. This is the case when



Slide the trapping tray into the rear of the screened bottom.

chalkbrood is detected. Mummies produced by this disease are readily visible on the board. In our apiaries, leaving the screened floor open for approximately a week has been sufficient to make all symptoms and mummies disappear.

Of the mites that fall onto the board, a substantial proportion are alive. Most of the time, they remain immobile until they are touched. But they can be seen moving about rather rapidly when the temperature is mild and when enough matter has accumulated to cover the sticky coating of the tray. Because ants can also walk on the debris that is on the sticky boards, they remove many of the fallen mites, which offsets the count of *Varroa*. These observations made obvious the necessity of having effective trays that could be left in the beehives for long periods, at least for a few weeks at a time.

The next trays I designed and fabricated were trapping trays. They are deep enough to accept more

Pour a little oil in the groove.



Continued on Next Page

Screens & Treatments

Ron Rudiak

I have been keeping bees long enough to remember how much easier beekeeping was before the arrival of tracheal and *Varroa* mites. The time between then and now has caused uncertainty among beekeepers, myself included. However, the last two seasons have led to an improvement in my attitude toward *Varroa* mites and I can say that this Summer is the first time in many seasons that I did not find myself overly concerned about these parasites.

Finding mites for the first time in your hives can be hard to accept because you know that beekeeping cannot be the same for you again. And so it was for many of us on the Canadian prairies as we came to accept the idea of using a chemical treatment for *Varroa* mites in order to continue our livelihood or hobby. We had to think in terms of two brood cycles (42 days) as the necessary time required to control *Varroa* mites. Hive products must not be collected for harvest during the period when hives are undergoing treatment with fluralinate strips (Apistan®) or

formic acid (legal here). Bees that were unwrapped or removed from the wintering building during the first or second week of April had to be given Apistan® strips quickly in order to complete the treatment before the major honey flow in June.

I began to use screened bottom boards in 2000 as a tool to continuously monitor mite levels in all of our hives. The screens were in place when I put in the required strips of Apistan®. It is interesting to observe *Varroa* mites that fall through the screens onto the metal trays placed underneath. Most of the mites come down on the first and second day of treatment. The majority remain alive (and motionless) on the metal trays, some for as long as seven days. These live mites can quickly attach themselves to an object, such as a pencil tip or a bee, placed within their reach. Without the screened bottom board, the mites that fall would simply re-attach onto a passing bee for a free ride back into the cluster of bees. The process of detaching in the presence of

Apistan® or formic acid, falling onto the bottom board and re-attaching onto a passing bee may repeat many times until the mite finally succumbs to the effects of fluralinate, starves to death or dehydrates because of being intermittently detached from a food source for too long.

When colonies are not being treated with Apistan® or formic acid, screened bottom boards continue to trap mites as they naturally fall from within the hive. Once *Varroa* mites fall through the screen onto the tray they are taken out of production permanently because they cannot re-attach to a bee. It has been shown that between 40 and 60 % of adult female *Varroa* mites can be removed from a colony when this system is in use. Screens help to control mites for 12 months of the year without the danger of mite resistance developing.

Including *Varroa* screens in a beekeeping operation is economical as well. If you decide to build your own *Varroa* screens during the Winter, they can be produced easily

than a month's worth of debris. Included in the design was a narrow groove around their perimeter. This groove was intended to contain a fillet of vegetable oil that prevented any pest from leaving or entering the tray. I handmade a few prototypes out of fiberglass, and then had them fabricated in plastic. Unlike the flat boards, these trays can be left in the beehives for several weeks at a time without tending to them. The oil does not evaporate in the summer and it also prevents propolis, pollen, wax and other materials from adhering to the surface of the trays. We liked these trays so much that we applied for a patent.

Observations and use -

Day after day, the trays are providing the beekeepers who use them with a picture of what is going on inside their hives. All sorts of debris fall between the frames. It accumulates on the surface of the trays. You see pellets of pollen, pieces of bee bread, wax flakes, wax cappings, wax worm feces and parasitic wasp cocoons, to name a few. These elements are clues as to what is going on inside the hive. In a way the trays allow the beekeeper to become a "fly-on-the-wall" of the inside

of his hives!

The area covered by dense debris shows where the bees are forming their cluster and how big it is. On the tray, the difference between worker and drone cappings is obvious. Worker cappings are chewed up and shredded into bits and pieces. Drone cappings often remain whole and dome-shaped as they fall through the screen.

With this tool, it is particularly exciting to follow the build-up and expansion of a swarm you caught, or that of a package of bees. From the nature and location of the debris, you can tell where the queen is laying, which frames young bees are emerging from and when you have to add a super.

Wax flakes look like tiny oval pieces of translucent glass. When frames of foundation have been added to the hive, you can see the lines of wax flakes on the tray. This is where the bees are drawing the combs.

When the bees bring pollen to the hive, a small portion of it falls on the tray. This is a good indication that the queen is laying and that there are larvae being fed. When there is pollen to be collected, the absence of pollen on the tray is a warning that the beekeeper

from scraps of lumber, the only cost is for the metal tray (ours at approx. \$3), screen, glue, nails and paint. Our screens cost approximately \$4.50 each and should last for 10 to 20 years because the sturdy design does not allow water to enter the joint where the screen is attached. We have discontinued the use of hive staples, which we found to be a nuisance long before including a *Varroa* screen between the bottom board and the first brood chamber. We have made enough ratchet hive- straps to hold our hives together for moving, each one long enough to hold four full boxes together for those unexpected moves. Sliding the tray out from the back of the hive about an inch provides additional ventilation for the hot days of Summer. Plugging the entrance and removing the tray allows *Varroa* screens to double as moving screens.

A tray the size of the bottom of the hive, placed upon the bottom board, is essential for the proper operation of a *Varroa* screen. The most important duty of the tray is to enable accurate monitoring of mite levels within the colony. To monitor, it isn't necessary to cover the entire surface of the tray with an oily product, a little around the edge will do. In actual practice I have found that greasing the tray is largely unnecessary because the

Varroa mites don't stray very far from the point where they fall but simply wait for a bee to pass within reach. The trays have to be scraped clean periodically to remove accumulated debris, especially in the Spring when the bees are doing a lot of house cleaning. We use a wide putty knife and occasionally a bucket of water and a sponge to clean up the soiled trays. Checking mite levels takes only about 1 to 2 minutes per colony. Mite checks show that, initially at least, not all colonies may have the same mite levels within a beeyard. If colonies are left untreated, a colony collapse will rapidly spread mites among other colonies including those with low levels of parasitism. In a group of colonies it is not unusual to find that some colonies continually show low infestation levels. Perhaps they are exhibiting some level of resistance to *Varroa* infestation.

The level of mite infestation can be estimated by counting the mites that fall naturally onto the tray during a 24 hour period. One fallen mite during this period means there are 500 alive within the colony. Two mites in 24 hours means there are 1000 alive in the colony and so on¹. In some cases it may be more convenient to use a longer time period such as 72 hours. In this case we would divide the fallen mite count by three to get the mite count

for 24 hours.

It has been determined that a mite infestation level of 1% in the Spring and up to 5% in the Fall are a cause for concern and that treatment should begin ASAP. By monitoring the tray under a *Varroa* screen, a natural mite drop of 1 mite/24 hours tells us that 500 are alive within the colony and 5 mites/24 hours gives us 2500 mites per colony. Assuming there are 50,000 bees in the hive in the Fall, the number of mites that drop naturally (i.e. no miticides) over a 24 hour period will give you a pretty good idea of the estimated percent mite infestation (e.g. 1 mite = 1%, 2 mites = 2%, 3 mites = 3% etc.). When treatment begins expect a large percentage of mites to fall during the first 24 - 48 hours. This is a good time to check for resistant mites as well. Because we have estimated the mite infestation level within the colony we also know the number of mites that should appear on the tray within the first 48 hours. If the required number of mites does not appear we would use another chemical (formic acid) to see if we are dealing with fluvalinate resistant mites.

¹ APIS Vol. 16 No. 2, Feb. 1998

Note: *The foregoing information is based on the author's experience and has not been scientifically evaluated.*

should look inside the hive, even if it appears to be a populous and active one. Indeed, the bees you are seeing in front of the hive may be young bees that are starting to fly out, the eggs of which were laid several weeks before. More bees will be emerging before the activity dwindles, but the queen may already have failed and stopped laying eggs days before.

The pellets of wax worm feces and heaps of shredded wax are obvious, and wax worms are often caught on the trays. The location and amount of the feces is a good indication of which frames are infested and whether they should be removed or left for the bees to deal with.

As mentioned above, the hard black or white mummies, symptoms of chalkbrood, are easily identified on the tray. This is a sign that the beehive needs increased ventilation. A beekeeper who observes this condition may "heal" the hive by removing the tray for a week, leaving the top of the hive open a crack, offsetting a super, enlarging the entrance or opening an upper entrance.

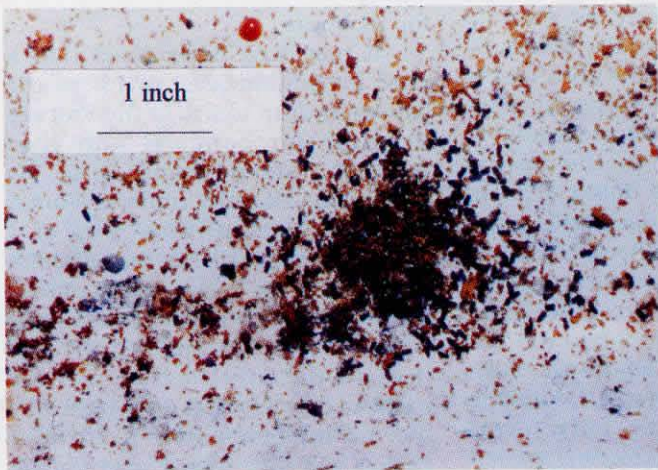
The trays can provide you with other valuable information about your bees. If you are like many

hobbyists, you can only observe your hives in the evenings. You may not be able to see an incidence of robbing when it occurs. Nevertheless, large quantities of bee parts, mostly wings and legs on the trays, are evidence that fighting and robbing has happened during the day. If you drastically reduce the size of the entrance, you may be able to save the colony.

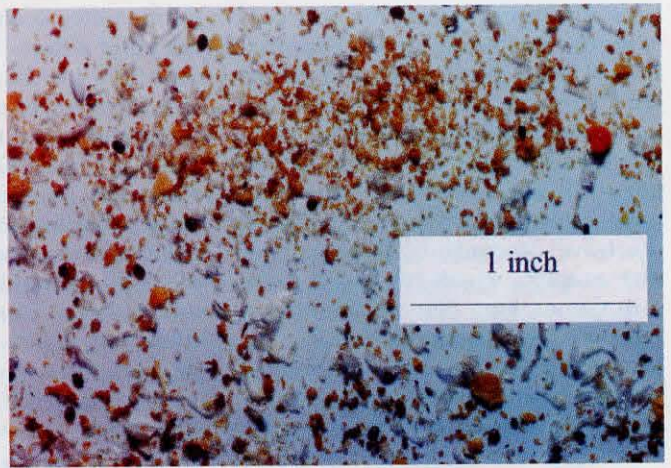
Condensation of water along the lines of frames tells you that nectar is being dehydrated and turned into honey. During the Winter, the amount of condensed water indicates the level of metabolism of your hives.

Trapping trays are reliable instruments for the detection of the presence of *Varroa* mites. They provide an element of control over the pest, as they trap some of the mites and prevent them from reattaching to bees. They reduce the mite population, constantly and safely, whether you have honey supers in place or not. Is this reduction enough to eliminate the pest? No, by no means. But use of the trays may keep the infestation within tolerable levels. Then you can decide whether something drastic has to be done to control it. By combining the use of the trapping trays with other

Continued on Next Page



Wax worm feces on the tray indicate the presence and location of the pest in the hive, as well as the level of infestation.



Brood cappings and moulting from recently emerged bees, mostly workers and a few drones, with scattered Varroa mites.

means of controlling the mites, such as brood trapping or sugar dusting, you may be able to eliminate or at least reduce your dependence on chemical treatment for your beehives.

Should you decide to chemically treat you colonies against *Varroa* mites, the trapping trays will retain any mites that have dropped through the screen and that manage to survive the treatment, minimizing the risk resistant mites will reproduce.


You can experiment with different beekeeping procedures, different substances, and the trays will allow you to evaluate their effectiveness.

Conclusion -

Screened beehive floors have been demonstrated to be simple but important devices that help control *Varroa* mites. In addition, beekeepers who have installed monitoring or trapping trays below these screens are now able to obtain important information about their hives without opening them. With these powerful pieces of beekeeping equipment, which record

the activity of the beehives and display their health status, beekeepers can significantly improve their beehive management procedures.

Looking back at the point when I transferred our colonies from solid bottom boards to screened floors with monitoring and trapping trays, I consider that we did more than upgrade our beekeeping equipment. We made the transition from the traditional way of "having" bees to a more rational, practical and effective way of "managing" our apiaries. We gained a better understanding of our colonies of honey bees.

Now, looking ahead to the next fight for the beekeepers: How about trying to control the small hive beetle by replacing a section of the trapping tray by a piece of fine bug screen? The beetles might be attracted to the open mesh instead of the entrance of the beehive, but would be unable to enter it in damaging numbers. Just a thought 

Serge Labesque is a sideline beekeeper who lives in Glen Ellen, CA. You can reach him at labesque@vom.com

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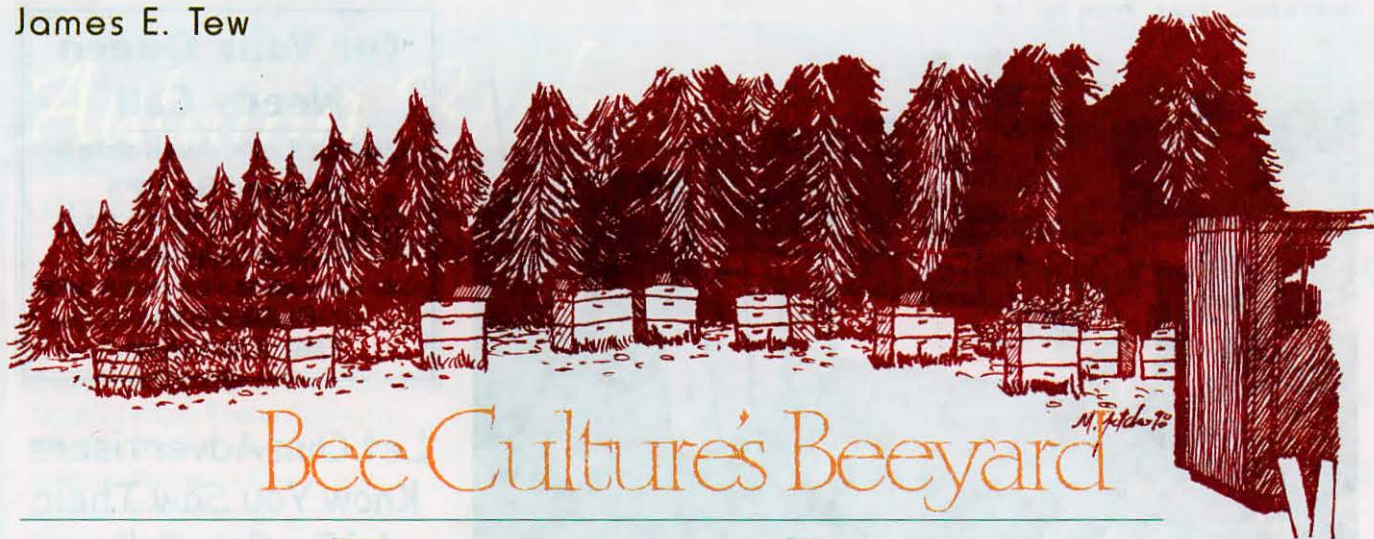
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Disappearing Disease

After several hundred years of observations, there are still plenty of mysteries behind the closed doors of the beehive. As beekeepers, we have always given simple answers to complicated bee questions. In most instances, our only other alternative was to give no answer at all.

During the Spring of 2002, numerous Alabama beekeepers experienced an inexplicable bee colony die-off. There was no obvious cause – even after USDA analysis. An old diagnosis was called up – The Disappearing Disease of Honey Bees.

My first association with this peculiar ailment was about 20 years ago, when I talked to the late Dr. Walter Rothenbuhler about the sickness. He had attempted to work on the problem, but never made much headway. Though he had performed several research projects, no conclusions were ever drawn. Scant research attention has been allocated to this syndrome over the years. Like an urban legend, the disease lives in scattered paragraphs in bee books near the end of the requisite chapter on bee diseases.

Some History

The condition was first described in 1915 and was called *Disappearing Disease* because the disease was self-limiting and disappeared. Through the years, that name has increasingly been broadened to describe any

mysterious instance where adult bees disappear – not the disease. Confusing isn't it? If the bees have disappeared, then the disease is gone, too. Right? From 1915 until this time, no single pathogen has even been isolated. Other possible names for the ailment are: Spring Dwindling, Fall Dwindling, May Disease, and Autumn Collapse. The Isle of Wight Disease, caused by tracheal mites, has many similarities to Disappearing Disease. The reported symptoms are broad and indistinct appearing to be a collage of characteristics.

In 1915, after a particularly wet Spring, significant colony losses were reported. One beekeeper lost 400 hives. The problem was noted in multiple states from Florida to California. Hives came out the Winter in good shape, but adult bees began to vanish at the beginning of the Spring nectar flow. In afflicted apiaries, at best, honey crops were reduced. At worst, colonies were essentially emptied of adult bees. During subsequent years, now and then, reports were posted presenting Disappearing Disease as the cause of occasional colony losses.

Characteristics of Disappearing Disease

1. Adult bee loss with no accumulation at the hive entrance.
2. Adult bee loss after a cool damp Spring – though losses have also been reported in the

Summer and Autumn.

3. Queens are the last hive individuals to be affected.
4. Pollen and honey stores are strangely normal.
5. A disproportionate brood/adult bee ratio.
6. Spotty outbreaks

Honestly, characteristics are broad and indistinct – except for one – adult bees are mysteriously gone. In 1985, Dr. Roger Morse wrote, "*It seems unlikely that any one cause produces all the losses attributed to Disappearing Disease*."

Possible Causes

Having already admitted that a single causative agent has never been isolated, guesses have been postulated that could justify the problem. I have presented them in no order of priority.

Possible Causes of Disappearing Disease

1. Pesticide exposure.
2. Nosema disease.
3. Tracheal mites.
4. Nutritional shortages.
5. Environmental conditions (predominantly weather)
6. Toxic pollen or nectar
7. Genetic disorders.
8. Colony stress.
9. Viral infections.

¹ Morse, Roger and Ted Hooper. 1985. *The Illustrated Encyclopedia of Beekeeping*. E.P. Dutton, Inc. New York, NY. Pg. 91



A forlorn yard with Disappearing Disease given as the reason.

Is this disorder a mystery?

I don't know what to say. As beekeepers, we all know that bad things can happen to good hives. With tongue-in-cheek, I suggest that this syndrome should be called the Miscellaneous Disease for it appears that any pathogenic problem of unknown origin that causes adult bee loss can be dumped in this group. The symptoms and specifics are just too broad to neatly fit into one grouping. As currently described, Disappearing Disease is not diagnosable, being nothing more than a list of disassociated symptoms. This is not say that something is not wrong within the affected colony, but rather we simply don't know where to place the blame. It follows then, that no control recommendations can be made.

Possible Sarcasm

A diagnosis of Disappearing Disease begs sarcasm and dark humor. How can you study the problem if there are no bees to study? I have no specific photographs for you in this component of this article because there is nothing to photograph. Beekeepers with full honey supers on hives with no bees humorously

have said that at least the colonies were gentle to rob. But to commercial beekeepers who are trying to make a living at bee keeping, this occasional condition is anything but amusing. Thankfully, it is not a common condition and appears to be self-limiting. But to beekeepers who have lost revenue and income, it is easy to be concerned - even superstitious. If you don't know what you did incorrectly, then you don't know what to do differently next season.

Sooner or Later

Sooner or later, apicultural science, in its lumbering fashion, will develop explanations and suggest solutions to various aspects of what is now occasionally called Disappearing Disease. Until that time, I suppose the diagnosis of Disappearing Disease serves a useful function in that, at least, we have a broad, indistinct category in which to place the occasional inexplicable and abrupt loss of adult bees. *They just disappeared.* **BC**

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BEE REMOVAL - II DECONSTRUCTION

Charles Martin Simon

In my previous article, in *Bee Culture*, July 2002, *Structural Bee Removal: Part One, Fundamentals and Finesse*, I covered trapping bees out of a nest without taking the building apart, my favorite way to go. But sometimes you can't do it that way. The usual problem is time. The property owner needs them out right now. They're remodeling, re-roofing, something important, and the work is halted until the bees are out of the way. The building must be taken apart and the bees physically removed.

This type of removal is the most difficult and dangerous. The dangers occur not so much between remover, structure, and bees, although they are there to be sure, but between remover and property owner. When you take a person's house apart, they just might get picky - later on, after the thrill of having their demons exorcized wears off, and they have to face the realities of reconstruction, or if it's already been reconstructed and it just doesn't look right.

I spoke with Roger Stark, an insurance man well-versed in bee-related issues. He told me removers were being sued for 50 and 60 thousand dollars! Now these are fellows who have done nothing wrong. They have performed the job exactly as agreed, but for one reason or another the property owner has become disgruntled.

Mr. Stark told me they do not write policies for bee removal. He said it's a job for a contractor and must be covered with contractor's insurance. His advice concerning structural bee removal when it involves deconstruction was quite simple and to the point: "Don't do it."

Good advice, but I am not going to take it. I survive on bee removal. I'll quit removing when they pry my

removal tool out of my cold, dead fingers.

So I consulted with my good friend the venerable and distinguished lawyer. I asked him whether a "Hold Harmless" clause might not be a good idea in the contract, something like the doctors make you sign before they start cutting you up? He said no, such clauses are unenforceable. If the party wishes to sue, they do it anyway, regardless of what they might have signed.

Then he added: "You're self employed. You have no attachable assets. For all intents and purposes, you're not actionable. Besides you do a good job, don't you?"

"Of course," I said. "I do the best job I possibly can, always."

"That's what I figured. And you're doing an important service, helping people solve a serious problem, maybe even a life-threatening problem. They'd have to be crazy to sue you. It would cost them a whole lot to get nothing."

So, if you're an experienced bee person, self-employed with no attachable assets, and you think you'd like to be a remover, you might go for it. But apparently the best advice is don't.

A clearly spelled out agreement in advance on paper, duly signed by remover and property owner, might provide some ammunition for avoiding trouble later on, albeit not all that powerful. In this country, to be legal, all construction must be done by a licensed contractor.

So, if you already happen to be a licensed contractor with insurance and a beekeeper at the same time, you're perfect for the job. Otherwise, you might consider getting a contractor's license, if you're young and ambitious. I am too old and not ambitious enough.

I only want to survive and keep doing what I know and love, removing bees.

A few years ago, I spoke with a yellow jacket man who was facing jail time over the issue. The oh so intelligent judge declared that the man's vacuum apparatus was to be considered a pesticide because it was being used in the extermination of bugs. Yes, I know, this is not bee removal, but it does speak to the issue of what trouble you can get into subject to a judge's interpretation. The yellow jacket man was being persecuted by the pesticide guys. And the judge, being totally in the pocket of the pesticide people, ruled that my man, since he did not have a pesticide license, was to cease and desist immediately. My man refused. Yellow jackets were his life, removing them his livelihood. The judge declared him in contempt, and when I spoke to him, he was waiting to see what his sentence was going to be. He was scared and uptight.

Personally, I don't think I'd mind being thrown in jail for bee removal. I might even like it. But then, I'm a writer, and it would make one hell of a story. Imagine: A big smelly fellow convict menacingly asks me what I'm in for. "Taking a few boards off a house without a license."

"Why did you want to do that?" he'd want to know.

"So I could remove a colony of bees from inside the wall," I'd reply.

"You mean bees? Like what sting you?" he'd ask, starting to be impressed, or maybe just incredulous.

"Exactly," I'd say. His face would darken then in puzzlement.

"What'd you wanna do *that* for?" "I like bees," I'd say.

"But they *sting* you," he'd say.

"I like getting stung," I'd say. At



Removal is a sticky job. It's at its worst when you work directly over your head, and you often have to. Expect to be showered with honey. It would be a good idea to have a few extra suits, hats, veils, and pairs of gloves handy. Getting honey all over yourself could be a good thing but the problem is it spreads to everything you touch. You don't want it on the steering wheel of your truck, the door handles, all over the seat, etc. You have to have a water source at the job. If there's none, bring it with you. Because you're going to have to frequently wash, yourself, your clothes, gloves, and tools.

which point, the fear would take him over, and he'd decide to go look for someone a little less crazy, a little less tough. Beekeepers are among the toughest people in the world. Bee removers are even tougher than that.

Or maybe you know a contractor you can work with. Or maybe the property owner can get a contractor, and you can work together. Have the contractor open up the space (You can lend him or her a bee suit and stay with the operation so things don't get out of hand), then you remove the bees, then the contractor restores the property.

I do prefer to be involved in the rebuilding process, for the simple reason that contractors, not being bee people, are liable to make mistakes resulting in re-

inhabitation by the bees in the future. In fact, it is mostly due to the mistakes of contractors in the first place that we have bee-ins a common one being the use of quarter inch mesh instead of eighth inch in vent holes. It's almost as if the contractors were trying to give us jobs.

I remember one job I did in a Victorian house, a summer beach rental owned by a major hotel. The contractor who put the pieces back together neglected to seal up properly, and the bees were back the following year. That time, I confess, I executed the reconstruction myself in flagrant violation of all contractor contract and permit clauses, but the bees haven't been back since. It's been 10 years at least, so the Statute of

Limitations has expired, and I am in the clear as far as that job goes. I am conscientious about my work, and I take many risks for the benefit of my clients.

One remover I spoke to recently told me they do it as a one-shot operation, in and out. They charge \$150 to show up and then \$150 per man hour. Two men = \$300/hr, plus the show-up charge = a minimum of \$450. With them it's usually a two-man crew, and it usually takes more than one hour, average \$750. They go in, they tear the building apart, suck the bees into a vacuum, bag the combs, and then leave. They let the property owner worry about left over bees and require him or her to hire a contractor to put the building back together again.

I do it differently. I charge by

Putting the house back together again, so it will be just as it was before you started - that's the hardest part, sometimes even impossible. Boards split and break when you take them off, no matter how careful you are, and you'd better be as careful as possible. If you had to buy new boards, fit and finish them, it could make the job unprofitable, unless that part is covered by the property owner, and if it is it better be in writing. Many times I have actually glued broken boards back together before replacing them. It's a good idea to use the original nail holes whenever possible.





The bee vacuum is almost essential for removals. You should set it up so the bees don't end up in the machine, or the machine is going to get messy, maybe even have a shortened life. I use a 5-gallon Shop Vac and a plastic bucket fitted with fittings (I've used different configurations, but positioning both fittings in the bucket lid gives most flexibility. That way you can use several buckets with one set of fittings; just switch lids.) perforated with air holes (but not on the bottom of the bucket - might leak fluid) which is then duct taped to provide suction while vacuuming, un-taped afterwards for air. Adjusting the suction is critical. Too little and it won't work. Too much and it damages the bees. Tap-

ing the holes is a low-tech but precise way to get it just right. Fittings that accommodate vacuum hoses can be bought at most generic large hardware stores, plumbing department. The tube used to suck the bees needs to be two tubes taped together end to end, so that the small ends are used both for sucking the bees and plugging into the bucket. The other hose, the one that goes from bucket to machine, is inserted into bucket into a fitting that is fitted with a length of perforated plastic pipe on the inside and capped, to keep the bees in the bucket. When bees are in the bucket, the open fitting is capped or taped shut. The fitting with the perforated pipe, obviously, is fine just as it is.

the job, not by the hour. I also break it up into three sessions spread out over three days:

Session 1. Deconstruction. The minimum necessary to get at the bees. Performed by a licensed contractor of course. It's never as easy as it looks. Nails don't come out clean. Boards don't come off in one piece. Sometimes the nest is not where you think it is. Or it meanders around joists, and you run into trouble. Or it's in the wall right where you expected it to be, but it moves off to between the floors or into the ceiling or attic. There are infinite configuration possibilities, and each presents a unique set of problems to overcome.

Session 2. Removal of bees and combs. There's a few ways to go here:

A. Cut out brood combs and tie them into frames with soft cotton strings. Place frames in a hive and add the bees from the cavity. This is messy and often painful (you have to take off your gloves to tie the strings, and you know what that means), and likely to be unsuccessful. It's best if you can leave the new hive at the site, as close to the cavity as possible, for

a few days. Otherwise, take it to the new location. Bring the bees to it and add them. Depending on such factors as season, it might be better to add the brood combs to an already going hive that could use some more brood and the bees to a going hive that could use more bees, rather than trying to keep the removed colony intact.

B. Use a vacuum to separate the bees from the combs. Every remover should have a bee-specific vacuum apparatus. I use a common 5-gallon Shop Vac, running the suction tube into a receptacle fixed to a five-gallon plastic pail perforated with air holes which I duct tape to provide

suction, leaving some holes open to fine tune the suction, too little force and the bees don't get sucked properly, too much and they get damaged. Afterwards I remove all the tape to provide plenty of air. The tube that goes to the Shop Vac is attached to the pail via a screened receptacle so the bees are not drawn into the machine but rather left nicely in the pail. Combine bees with an existing hive. Separate combs suitable for human consumption. Feed those not suitable back to the bees. Give good brood combs to an existing hive.

Session 3. After allowing a day or so for left over bees to cluster, remove them (the vacuum here too) and add to hive. Scrape cavity clean.

If many bees are flying during Session 3, a fourth session will be necessary. I usually allow a day between sessions. Of course, to round up left-over bees, it's best if you go first thing in the morning.

The job is done when there are no bees left and the cavity is as clean as possible. **BC**

Charles Simon removes bees, and repairs houses, around his home in Soquel, CA.

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Honeybear Apiaries

Wintering Success in the North

Allen Dick

Barrie and Julie Termeer have owned and operated Honeybear Apiaries on an acreage just north of Rolly View, a picturesque hamlet just south of Edmonton, Alberta, since 1983. They've developed their business into a first class commercial operation over the years and much of their success is due to consistently good wintering.

Barrie has worked hard to build their business and at the same time contributed greatly to the beekeeping industry. He has served as both president of the Alberta Beekeepers Association and president of the Canadian Honey Council, and has freely shared his experience and knowledge with other beekeepers in Canada and the U.S.

Over the years I've made a point of visiting him to observe first-hand his wintering methods because he is consistently successful and because his system is unique and inexpensive. He developed their solar wrap and wintering systems over many years, learning as he went, so I asked him how he got to where he is today:

I understand you grew up in a beekeeping family. Can you tell me a bit more about that and how long you have been in bees?

My parents, Evert and Dien Termeer, came from Holland in the early 1950s. Dad had several hobby hives in Holland, and eventually began working for Vic Mesley, who ran Rideau Honey in the Ottawa area.

Dad also bought a dairy farm, and after a few years purchased 400 colonies from Vic Mesley and began his commercial beekeeping, along with milking 30 Holsteins until the 1970s. At this time he sold the cows and

quota and built up the bees to about 1,200 hives, where their count has stayed for about 30 years.

I grew up with the bees and cows, and in hindsight know it was a wonderful way of life, even though as a boy I was reluctant to get up early for milkings, and didn't always like bee stings either!

Is the original family operation still in business?

Termeer's Apiaries Ltd. is now owned and operated by Robert, my younger brother. As you know, another brother, Bill, runs 1,400 colonies at Sexsmith, Alberta, so together with my 3,400, the Termeer family operates about 6,000 beehives.

How did you come to be here in Alberta. That's a long way from Ontario?

I was always looking for an opportunity to get into the bees, and ended up in Alberta because I had worked for Fred Smith and Rideau Honey (Vic Mesley) both of Hines Creek, as a means to pay my way through University.

I earned a B.Sc. Agr. Entomology-Apiculture, with a minor in Agribusiness at the University of Guelph, in Ontario, graduating in 1980. I saw that Alberta had the best opportunity for beekeeping and I loved the land and the people. I worked in Edmonton for three years, where I did service sales providing non-foods and housewares, over 4,000 products, to large grocery chains and convenience stores.

While working in Edmonton, I attended Alberta Beekeepers Association conventions and stopped in occasionally at the Alberta Honey Producers Co-op (AHPC). As a result of these visits, Bernie Rouseau at AHPC connected me with Art Meyer, the previous owner of Honeybear which was then known as Sleepy Hollow Honey Farms and I was hired on as a manager. In the second year (1984) we became full partners, and in 1987 Julie and I bought out Art's shares and established Honeybear.



Two hives wrapped side by side. The fronts of all hives face directly south, for maximum solar gain on sunny days. The front surfaces have only a single thickness of black plastic to allow the sun's heat to penetrate to the hives inside. The sides and back are insulated with R12. Only an airspace separates the hives inside the wrap. The wooden landing pads help the bees find their way back to the entrance and also hold the plastic against the hives for better warming. (Termeer photos)

You and Julie have been a great team. How long have you been married now?

We were married in 1984. Our daughter, Amanda was born in 1986 and is 16 years old and Dylan was born in 1990, so he will soon be 13.

I understand that Dylan developed an allergy to bee stings a while back. You and your family live just across the pond from your new honey plant and your home beeyard, so there are bees around all Summer long. How do you deal with that?

Dylan was diagnosed with honey bee venom allergy about 2 years ago. The allergy had developed over the previous few years, with reactions worsening each time. He is currently undergoing venom immunotherapy in Edmonton, and has now reached a tolerance for a dose equalling about 4 bee stings, a huge improvement from about a year ago.

I understand that having a successful wintering method has played a big part in your success. How many hives go into winter?

This year it will be about 3,250, with about 800 of those indoors, the balance, about 2,450, outdoors.

What are the reasons for using both indoor and outdoor wintering every year? Do you find that one or the other is better for nucs?

The hives we'll Winter indoors are in single brood chambers with nine frames. They were splits made this Spring with three or four frames of bees and brood, and Kona queens. They were run as singles this Summer, with queen excluders for honey production, and will go into the building in November. (*Honeybear's hot room for extracting was also designed to be a wintering chamber in the off-season*)

Our hives are normally run with two on a pallet, facing south, in permanent sheltered locations, but these 2002 splits are run as 4-packs. They are forklift-ready and used on temporary Summer locations to get close to canola and borage crops, with little concern for the shelter required for a good wintering location.

We have found that these first-year splits Winter better indoors. The climate-controlled wintering room

A pillow of Fibreglas fully encased in 6-mil plastic, under each telescoping lid, keeps the cluster warm in late winter. A heavy rock keeps each lid from blowing off. Access for spring inspection, treatment and feeding is simple. (Termeer photo)



protects these smaller hives from the extreme Winter conditions that our stronger outdoor hives must endure. We get temperatures as low as -40°C for days on end, sometimes accompanied by wind, and we find we have more consistent success with these smaller hives indoors. The singles from indoors are then made into doubles the following Spring to fill up the 'holes' from losses in the outdoor yards.

I realize that we are comparing apples to oranges, since the hives that you winter outdoors are more mature and better established than the indoor hives, but how would you compare the success of indoor to outdoor wintering?

Overall, outdoor colonies Winter a little better and come through stronger, but that is partly because they are in two brood chambers. Nonetheless, the indoor hives all have young queens and build up rapidly in their second season, so they catch up to the outdoor hives by honeyflow time – but they do not give as much extra brood for new splits as the outdoor doubles. That is why we run both systems, getting different advantages from each.

You have developed a simple, inexpensive and unique wrap that you build yourself, and which works well. What are its plusses? Minuses? How do you think it compares to other wrapping systems?

Our wraps are called solar wraps, with insulation on the east, north and west sides, but only a layer of heavy black poly on the south exposure. On sunny Winter days, the sun heats the entire front of each hive very noticeably. We use bore holes in the fronts of our upper brood chambers. The upper wrap has a matching hole that provides a top entrance and ventilation in winter and spring. The single thickness of plastic wrap on the front makes it easy for us to nail on a landing pad at this point.

Plusses are ease of application. Our wraps go on two hives (in pairs side-by-side) at a time. Granted, that exposes one more surface than 4 packs, but wrapping is still very fast. Two men can wrap 450 hives a day.

The side wraps are R12 fibreglas encased in 6 mil black plastic. On top of each hive, under each telescoping hive lid, we use a pillow of R20 fibreglas

A stick is placed across the top bars to ensure that the bees can get from one frame to another in winter.





Singles wintering indoors. The wintering room serves as a hot room at harvest time.

encased in 6 mil poly sheeting. Using this system, we can easily remove the hive lid at any time of year without removing the wrap. This system allows very easy access in early Spring for application of a pollen patty, Apistan, or other attention. Also when we unwrap in April, side wraps come off, but the top pillow stays on a few weeks longer.

I feel this wrap, with the solar benefits, allows for less feeding per unit. Compared to non-solar systems, bees cluster more loosely in February and March, and can access feed throughout the hive on sunny days. On the dull cold days of December and January, we see no direct benefit, but large colonies clustering tightly and undisturbed can take lots of low temperatures, given good shelter and a windproof wrap.

Have you ever tried wintering singles outdoors?

We did a bit of wintering singles outdoors, years ago, setting down top units from two-queen units.

We usually had about 35% loss and inconsistent results, but I believe other beekeepers doing much better with singles in four packs, wintered under the snow.

What Spring, Summer and Fall things do you do — and not do — that you think ensure good wintering.

Spring management – March 1 onwards – involves a visit while the snow is still on the ground to open hives, evaluate losses and condition, and to apply mite controls. On that visit we give each hive a pollen patty with fumagillan and Oxytetracycline. We do not use grease patties, now that the initial tracheal mite infestations have become well established.

Our early check in March also allows us to move frames of honey to save smaller colonies, and they are evaluated in late April or early May to determine their viability. Such smaller colonies we run as singles, and they often produce excellent honey crops.

Summer management at Honeybear includes using queen excluders. This protects brood nest, protects queens, and gives a heavier weight going into Fall. (We

supplement this with feeding from open drums, with straw on top of the syrup to provide a landing surface and to prevent drowning).

We cull in the Fall a bit, as we remove the last round of honey with blowers, but the culls are mostly just queenless and drone layers. We just blow them out and let the bees go where they may.

Have the mites had much impact on success?

Some years, yes, other years, no. Since we discovered tracheal mites in the early 1990s and *Varroa* in about 1995, our hive count has increased from about 1,500 to 3,400 today.

This was accomplished due to good wintering and availability of off-shore queens, mostly Hawaiian, from Kona Queen.

Management for mites is intensive, timely and exacting. We fit in treatments with other jobs, but make sure they are never missed. We check mite levels, but don't rely on that to treat. Treatment is standard across the board. We apply with five formic pads (33 ml each) a year and one Apistan (soon to be Checkmite+) treatment.

What is your average and high and low success rate in recent years?

Our average losses run about 10%, as low as 5%. Losses ran as high as 20% when we had our first outbreak of tracheal mites years ago, and losses reached 17% this year. This year, we had unusually cold weather that lasted well into May. In spite of our treatments last year, we saw symptoms of higher tracheal mite levels in hives that succumbed to the cold Spring conditions, so we think




that, together with a late Spring, that tracheal was a contributing factor.

When do you count the losses? At what point do you decide a colony is counted as dead?

Our loss numbers are calculated twice, first when they are opened in March (basically dead-outs), then again in May after reversing, to include the drone layers.

What do you think are the most important factors determining wintering success?

Good feed, good queens, either purchased or from supercedure, along with proper mite controls applied each Spring – and Fall in some cases.

Good locations with shelter are important in Winter and help a lot in the Spring also. Top insulation is probably more important than side wraps, but both are required in our region for reliable wintering, and for healthy bees in Spring. 

Allen Dick is a part time commercial beekeeper from Swalwell, Alberta, Canada. He is a frequent contributor to these pages.

MAKING YOUR OWN NUCS

Peter Sieling

Can a beekeeper/woodworker save money by making his own woodenware? Commercial manufacturers have the advantage of big machines, all preset for a single operation. They buy lumber wholesale. They just stuff the lumber in one end of the factory and it comes out as hive components, neatly boxed and ready to ship at the other end. But they also have big expenses – advertising, interest, insurance, maintenance, payroll and taxes. It is possible that a beekeeper might save money milling his own equipment, especially if he already has a wood shop in his garage or basement.

When a professional woodworker wants to cut costs on making furniture, he or she might make several identical pieces at one time. A large portion of time goes into measuring and setting up power tools for single cuts. By making several items at one time, machine set-up occurs only once. Beehive parts lend themselves to small production runs.

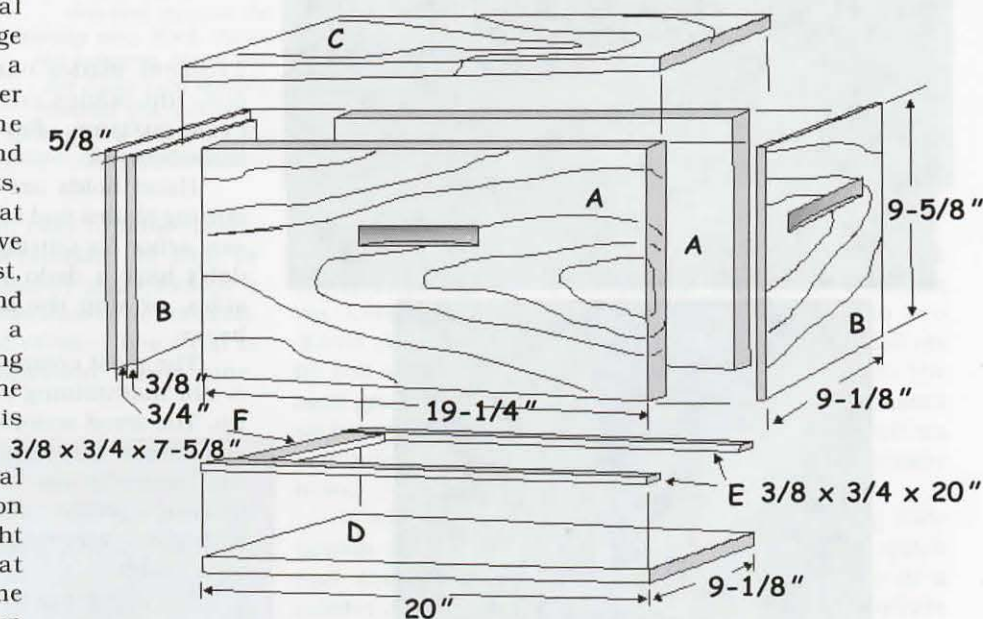
I recently did a small production run of nuc hives and measured how cost effective it was to make my own rather than buy them. As a lumber processor and distributor, I have access to lumber and a shop for my own hobby woodworking.

Tools

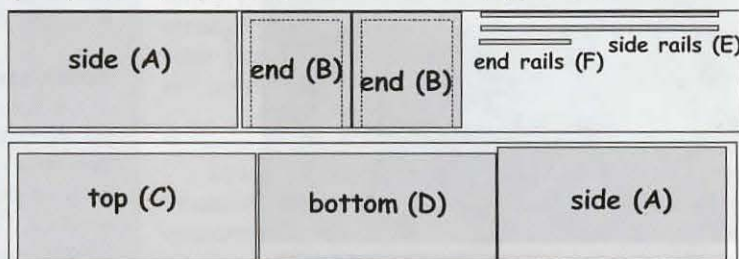
I started the initial milling with small industrial tools – a 5 hp planer and jointer. For most of the milling operations I used a couple of old 3/4 hp table saws, one for sawing and the other for cutting hand holds. (Note: the machines pictured *do not* have safety devices because they are old. *Do not* remove safety devices from your machines.)

If you start with planed lumber, a nuc hive requires only a table saw and its accessories, the miter gauge and fence. For the slight difference in cutting quality it's not worth changing blades every time you change from ripping to crosscutting.

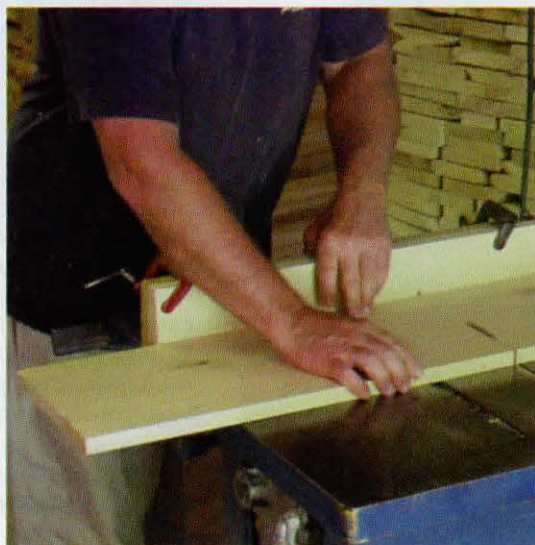
NUC HIVE



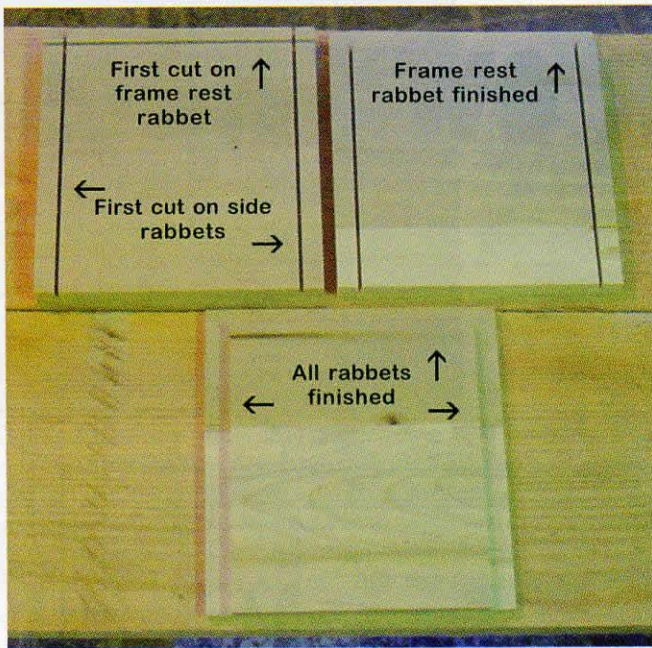
Glue up 2 panels to yield 3/4 x 10 x 60" (approx. 9 BF)



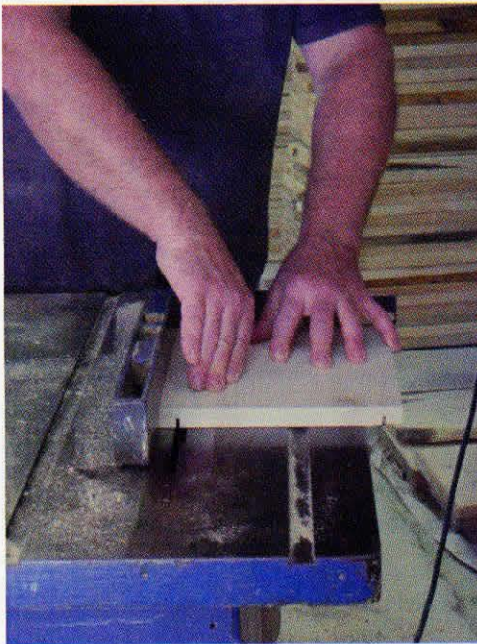
The parts and pieces you'll need, with cuts and dimensions.



When cutting several pieces the same size, use a measuring board so they are all identical.



First cut on the frame rest rabbet: Set the rip fence 5/8" from the far side of the blade. Set the blade height to exactly 3/8" and rip the tops of all the ends. First cut on the side rabbets: Set the fence 3/4" from the blade. Saw both sides. Finish cutting the side rabbets. Raise the blade to 3/4" and set the fence to 3/8" from the far side of the blade. Rip the sides of the ends removing the waste wood. The two saw kerfs should meet neatly and squarely. Finish the frame rest rabbets. Lower the blade to a 5/8" height and saw out the waste wood.



Crosscut blades cut more slowly and with less tear out. Rip blades cut faster and not as cleanly when crosscutting. For general work they can be interchanged.

Hand holds are cut with a dado blade set – two cutting blades and several chippers stacked on the table saw arbor for cutting grooves of various widths. If you don't have a dado set, you fasten wood cleats to the sides, or skip the hand holds. Nuc hives aren't that heavy.

The most common error hobby woodworkers make is not maintaining and tuning tools. Dull blades heat up. The wood scorches, the blade expands and warps, sometimes throwing the wood at the operator. Send the blades to the sharpener or buy new ones before starting a production run. Coat the saw table and blade with paste wax frequently. The blade runs cooler and cuts faster.

For adjusting the table saw you need an accurate square. Don't trust the gauges stamped on the saw itself. They are rarely accurate. Always make a test cut on scrap wood to insure the cut is square before cutting a stack of parts.

Templates

If you plan to regularly make parts, make templates for all the hive parts. These can be nothing more than accurately cut parts from previous productions, marked so they don't accidentally end up nailed into a bee hive. Rather than measuring parts every time, use the templates to set up the saw.

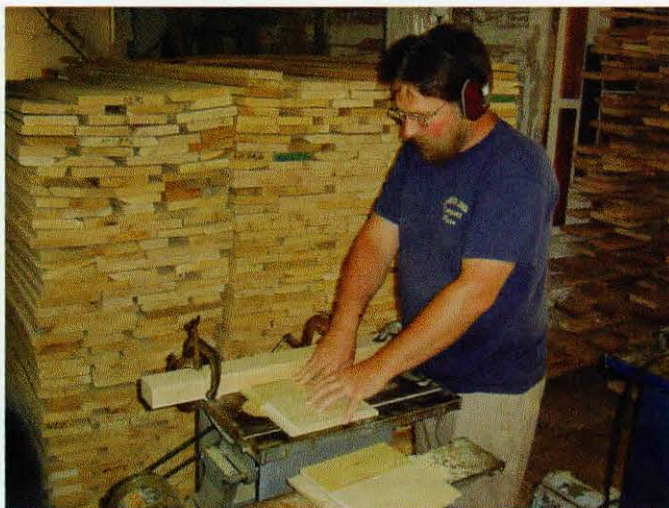
Measuring Board

You can save a lot of measuring time by making a measuring board with the frequently used sizes already marked on it. If you measure and mark a stack of 20 sides, then cut on the line, you've just spent several minutes marking and each side will vary slightly, depending on the accuracy of your pencil line. Before a production run you can eliminate the measuring time and make identical parts to within .001" The measuring board is pre-marked with every cut needed for the run. Clamp a straight, flat board to the miter with one end extending about 24 inches beyond the blade. With a square scribe lines at the frequently used lengths from the blade. Clamp a stop block at one of those lines and saw out as many parts as you need.

Lumber

The bees don't care what kind of lumber you use for their hive. I consider the following factors in

Replace the regular table saw blade with a 3/4 or 7/8" wide dado blade to cut handholds. Set the rip fence approximately 3" from the blade. Center the side (and later an end) over the blade and clamp a stop block about 1" past both ends of the board. With the blade below the table, start the saw with one end against the starting stop block. Raise the spinning blade into the wood (you already counted the number of turns on the crank for the proper height, didn't you?



choosing a lumber species: cheap, easy to nail, stable, light weight and if possible, rot resistant. As long as the outside of the hive is kept painted and elevated a foot or so from the ground, rot resistance is not crucial, at least in the Northeast and arid areas. I use what is plentiful and cheap locally – basswood, white pine,

Lumber Grade

Hardwoods are graded according to the percentage of clear cuttings in the wood. I use #2 common, almost the lowest grade. It normally yields one half to two thirds clear material. Leaving most of the sound defects in will allow even less loss. Using #1 Common, the next grade up, yields almost all clear hive components with judicious trimming. Select and FAS grade allows you to "cookie cut" out your pieces but costs significantly more.

If wide lumber is available, use it, but gluing wide panels is standard woodworking practice. It is quick and simple. Edges are usually straightened with a jointer or hand plane, but a high quality carbide crosscutting table saw blade or a "planer cut" ripping blade will make a suitable edge. No dowels, biscuits or fancy glue edges are necessary. A good glue joint is stronger than the wood. Beehives are good for practicing edge joining boards. The bees will be satisfied if you are a few thousandths off.

Machine Safety

Power tools are dangerous machines. Almost every week I see woodworkers with various combinations of fingers missing or mutilated. Mine are intact in spite of several close calls. If you are new to woodworking, take a woodworking course to learn about the machinery you will be using. These are available almost everywhere. Check your local high school or community college for their adult education courses. A good teacher stresses safety. Minimize the risk by observing these rules:

1. Never use machinery when you are tired or taking drugs than effect alertness.
2. Use all safety devices provided with the machine at all times.
3. Use push sticks, especially on small pieces.
4. Sawblades should just clear the thickness of the stock being cut.
5. Never use dull blades. They can overheat, bind in the kerf and send a board across the room or into you.
6. Wear safety glasses and hearing protection.
7. If you are unsure about a particular operation, don't do it.
8. Stand to the side of a machine when using it, not in the path of a potential flying object.

poplar or aspen. Other woods are more common in other areas, such as the cedars, cypress, sugar or ponderosa pine.

Kiln dried lumber is not necessary and may actually swell enough to enlarge the bee space. Store it for a couple weeks in your basement or outdoors under cover before cutting it up. It will absorb some moisture from the air and swell slightly. Air dried lumber may be less expensive but must be thoroughly seasoned before use or it will shrink and warp.

Determining quantity of lumber

Practically every day cabinetmakers give me a bill of materials for a project and ask how much wood it requires. It is simple to figure the actual quantity of wood in a project. It is harder to estimate the amount that ends up on the floor as cutoffs or sawdust. Lumber is usually sold by the Board Foot (BF). One BF equals 144 cubic inches of rough lumber or any multiple of 1 square foot of 1 inch thick lumber. Lumber planed to 3/4" is still measured by the rough thickness. A full depth 5 frame nuc hive includes a little over 7 BF but unless you can find exact sizes you have to add a "scrap and trim" rate. For most projects, I estimate 25% extra. That amount allows for discarding big, ugly and hollow knots in lower grade lumber.

Nuc hive design

There are numerous designs and dimensions used in a commercially designed nuc. They typically come in 3, 4 and 5 frame sizes. I kept the parts as simple as possible, rabbit jointing the corners, skipping an inner cover and telescoping cover, and replacing them with a single board. These covers will probably warp eventually and when they do, I will flip them over so they warp back flat. They are not intended for continuous use.

Continued on Next Page

Bill of Materials for One 5 frame Nuc

all dimensions actual

| Part | Description | Size | No. required | Board Feet |
|------|----------------------------|----------------------|------------------|-----------------------|
| A | Sides | 3/4 x 9 5/8 x 19 1/4 | 2 | 2.6 |
| B | Ends | 3/4 x 9 5/8 x 9 1/8 | 2 | 1.3 |
| C | Top | 3/4 x 9 1/8 x 20 | 1 | 1.3 |
| D | Bottom | 3/4 x 9 1/8 x 20 | 1 | 1.3 |
| E | Side rails | 3/8 x 3/4 x 20 | 2 | .2 |
| F | End rail | 3/8 x 3/4 x 7 5/8 | 1 | 1 |
| | Total | | | 6.8 |
| | Scrap and Trim rate | | 25% Extra | 1.7 |
| | Total per Nuc Hive | | | 8.5 Board Feet |

Individual beekeepers will vary the design to suit themselves.

If you put ten new frames in a new hive body, there is almost enough room to fit an eleventh frame. If you make a five frame nuc by dividing the width by 2, you will also divide that extra space in half. When the bees propolize the frames it will be difficult to manipulate them without squashing bees and possibly the queen. The width of a nuc hive should be a little wider than the number of frames they are made to fit. Many beekeepers use 9 frames even in the brood chamber. The bee space rules in the nuc hive's width can bend a little. To make the frames in a nuc easy to remove and insert, I chose the inside width by adding the total widths of five Hoffman style frames (1-3/8") and adding an extra 3/4"

Procedure

1. If starting with rough lumber, plane it to 3/4" All lumber warps to some extent during drying. I face jointed the lumber first to flatten it, then "hit or miss" planed it to about 15/16" so I could finish plane it after joining. Make long lumber more manageable by cutting out undesirable knots or cutting convenient lengths in multiples of the part lengths.

2. Straighten one edge and glue the boards into 10" or wider panels. Because hives are exposed to sun, rain, snow, and ice, use a waterproof glue, such as Titebond II. Jointed edges aren't perfectly straight. Usually when aligning the boards there is a gap of up to 1/32" between them. Put the first pipe clamp at the widest part of the gap. It should draw that small of an opening closed with light clamping pressure.

The right amount of glue results in a small bead squeezing out along the joint, not big droozles dripping on the floor and workbench and your hands. Clamp with moderate pressure - too much squeezes out the glue, weakening the joint.

3. Rip the panels for ends and sides to 9 5/8" and the top and bottom panels to 9 1/8" The leftover strips are used later for the bottoms or cut up for smoker fuel.

4. Make sure the miter gauge is set perfectly square. Square the panel ends and cut parts to length using the measuring board as a guide.

5. First cut on the frame rest rabbet: Set the rip fence 5/8" from the far side of the blade. Set the blade height to exactly 3/8" and rip the tops of all the ends.

6. First cut on the side rabbets: Set the fence 3/4" from the blade. Saw both sides.

7. Finish cutting the side rabbets. Raise the blade to 3/4" and set the fence to 3/8" from the far side of the blade. Rip the sides of the ends removing the waste wood. The two saw kerfs should meet neatly and squarely.

8. Finish the frame rest rabbets. Lower the blade to a 5/8" height and saw out the waste wood.

9. Cut the side and back rail material. Set the saw to rip 3/8" strips. Use a push stick to keep fingers away from the blade. Crosscut the 3/8" rail material to length.

10. Replace the regular table saw blade with a 3/4 or 7/8" wide dado blade to cut handholds. Set the rip fence approximately 3" from the blade. Center the side (and later an end) over the blade and clamp a stop block



Assembly. Screws make repairs easier, but make sure you don't split the ends.

Set-Up & Process Time

| step # | Process | set up time | milling time |
|--------|--|-------------|--------------|
| | set up table saw, check for square miter gauge and parallel fence | 10 | |
| | Making a measuring board | 32 | |
| 1 | joint 1 face cut to convenient length hit or miss planing | 3 | 7 4 10 |
| 2 | plane one edge glue panels | 2 | 17 12 |
| 3 | plane 2 faces to 3/4" joint one edge of panels rip panels to width | 4 | 24 |
| 4 | square ends cut components to length | 1 | 30 |
| 5 | set up and rip 3/8" on ends set up 5/8" shoulder cut | 9 3 | 4 2 |
| 6 | first cut on side rabbets | 2 | 3 |
| 7 | reset blade and saw rabbets | 1 | 4 |
| 8 | crosscut frame rest rabbets | 1 | 2 |
| 9 | Rip 3/4x3/8 bottom rail crosscut to lengths | 1 2 | 3 1 |
| 10 | dado side handles dado end handles | 12 3 | 4 6 |
| 11 | drill holes on ends | 3 | 5 |
| | total time | 89 | 138 |

about 1" past both ends of the board. With the blade below the table, start the saw with one end against the starting stop block. Raise the spinning blade into the wood (you already counted the number of turns on the crank for the proper height, didn't you?) till it reaches the desired height. Slide the board along the fence until it reaches the ending stop block and shut off the saw and allow it to stop before lifting the board.

11. Tulip poplar is a little harder than pine or basswood. It is soft enough to nail but I used screws because a box was handy and the appropriate nails were at the hardware store. To prevent the screws from splitting the boards, I drilled the ends. End grain does not make a strong glue joint. Since rabbet joints do not provide side grain to side grain mating surfaces, there is no advantage in gluing, except maybe to seal the end grain from moisture.

At this stage, the nuc hives are ready to assemble. Putting them together will take about the same time as assembling commercial nuc hives.



Finished nucs, ready for paint, or sale.

Cost Comparison of Commercially Manufactured versus Homemade

60 BF of lumber at a retail price of \$81.00 yielded 7 nuc hives – just under \$12 per nuc. Milling required approx. 20 minutes per hive. Total set up time, the same whether you make 1 or 1000 nucs, required 1 hour and 30 minutes. The least expensive nuc hive I could find in a catalog cost about \$20. Ignoring shipping cost for commercial nucs, I saved \$8.00 per nuc for a total of \$56. I spent almost four hours making them. In other words, I earned a little under \$15 per hour. The cost goes down as the quantity increases. Making 50 nucs, I should have saved enough to earn approximately \$22/hour.

You of course earn a lot more than that producing honey. If you enjoy woodworking, it is a profitable way to spend cold Winter nights in your basement or garage workshop. If you consider woodworking an unpleasant business, your blades are dull and your tablesaw is rusty, it is far less expensive to buy commercially produced woodenware. **BC**

Peter Sieling makes nucs, supers and all manner of beekeeping equipment in his workshop in Bath, NY. He is a frequent contributor to these pages. Next month he's making rabbeted supers.

THE GOOD MEETING



James E. Tew

Early tomorrow morning, after eating breakfast, I will go to the annual two-day fall meeting of a state beekeeping group. As have so many others, I have gone through this meeting ritual many, many times. So what's my guess? Will tomorrow's meeting be a good one or a dud? Just now, I don't know. The more meetings I attend, the less certain I become about what comprises a "good" meeting. In numerous past articles, authors have listed and outlined various ways to help assure a successful meeting, but I wonder how objective such writers are. (You should note that I too, have tried to write previous articles on this topic¹.)

A bee meeting is evaluated in different ways by different people

¹ Tew, James E. *Organizing a Bee Meeting*. Bee Culture, October, 1996 bee.airoot.com/beeCulture/months/96oct/96oct3.htm*

Tew, James E. *Beekeeping Workshops – Organization and Administration*. Gleanings in Bee Culture, May, 1981. pp 270-271*

Tew, James E. *Local Bee Meetings: The Heart of Beekeeping*. Gleanings in Bee Culture. Jan. 1987. pp. 22 & 27.*

James E. Tew. *Building a Better Beekeeper. Parts I, II, & III*. Gleanings In Bee Culture. Nov, Dec, 1988, Jan. 1989.*

James E. Tew. *Who Has the Program Next Month?* American Bee Journal. Nov. 1987 pp 800-801.

*Available at www.BeeCulture.com

attending the same meeting. Attendees, organizers, commercial exhibitors, speakers, and facility staff all have different criteria for evaluating the same meeting. A good meeting for one sub-group may be the worst meeting ever for another subgroup attending the same meeting.

Speakers

My concept of a great meeting is primarily based on my involvement as a speaker. I suspect that some speakers are categorized as necessary nuisances for meeting organizers. "I need a Power Point projector." "I have a flight that leaves earlier than I thought." "Do you have an empty slide carousel?" It's true, speakers can be an elitist group, but they can have their legitimate complaints, too. I now present some examples that may very well get me in trouble.

1. Many years ago, without notice another speaker didn't show up. With no chance for preparation, I was asked to "go longer" to make up the time difference on the schedule. (Pity the audience.) As best I could, I mentally restructured my presentation and launched in to it. With no warning, about 50% through the new time allocation, the MC publicly

requested that I cut it short so we could have a longer break. I experienced "Speaker Nose-bleed" – a presentation initially too short and then too long. I can only suppose I was doing badly in my presentation. The results? We all looked bad.

2. I was recently presenting a talk outside the U.S. to a packed room. With absolutely no warning, all the electrical power went off. Honestly, the room was as dark as a tomb. It was pitch-black. I was afraid to move for fear of falling from the stage. At last, someone found a door and let in enough light that, "I could finish up." What could I say in a room of 200 people enshrouded in darkness that they wanted to hear? I chose to say, "Thanks for having me here today. Goodbye." That seemed to be the right thing to say.
3. "No we don't have another projector bulb. Do you really need your slides?" I suppose I should have done the, "Thanks for having me here today" routine. Instead, I tried to carry on and slowly died before the group.

Speakers can be an organizational pain, but helping them look good in front of the audience helps provide a positive meeting atmosphere.

Organizers

I don't particularly want to try to outline *Little Jim Tew's Guide to a Perfect Bee Meeting*. I don't feel qualified for such a task, but below, I have presented some broad suggestions for organizers.

Time

The true gift of a good meeting organizer is one who starts the meeting on time, stays on time and ends on time – all without appearing to be a schedule brute. Speakers that drone on and on can make a meeting organizer digest his/her stomach. How you politely word, "Shut up!" to a rambling speaker can be the good organizer's challenge.

Sight and Sound

The attendees must be able to hear the speakers and see the slides (or graphics). No PA systems, inadequate systems, auditorium echoes, no projector screen and people who stand at the back of the room and chat are all reasons that even the most prepared speaker cannot succeed.

Everything else is nuts and bolts

Meeting facilities, directions to the meeting site, advanced advertising of the meeting, restrooms, lunch, and light switch locations are some of the picayune

organizational nuts and bolts that when handled well, can improve a meeting.

Participants

Without participants, there is no reason for a meeting; therefore, participants must be cut some slack. Other than listening to the presentations, coughing, coming/going during the presentation, challenging the presenter, and sleeping during presentations are common participant activities. Though such activities may occasionally be distracting to the presenter and disconcerting to the organizer, they are common attendee behaviors and should be expected. As it were, "the customer is always right." However, high levels of such behaviors are indicators of a meeting that is not going as well as it could.

Where is this discussion going?

If my purpose is not to attempt an outline for *the perfect meeting*, what am I trying to do here?

One of my points...

I predict that the meeting organizers of the upcoming meeting tomorrow will be disappointed with the turnout and the overall success of the meeting. There will be the usual comments about how much advertising was done; how much

preparation went into the development of the meeting; reference to the high-quality speakers will be made; and myriad reasons why beekeepers chose to do something other than attend this meeting will be discussed. Why do I anticipate this reaction? Because during recent years, it is such a common outcome. It appears to be a trend across U.S. society that people don't attend meetings the way they (apparently) once did. I don't know why, but it's not just beekeeping. I don't even know for sure that it is bad to have a smaller group in attendance, but not so small that group dynamics are lost.

Another of my points...

If I could, may I use analogies at this point? Tomorrow morning at 8:00 AM, registration will start. That will be comparable to the click, click, click, of a roller coaster beginning its ascent up the first large hill on the track. At 9:00 AM, the meeting roller coaster will fly down the first hill and for the remainder of the day, the meeting will roar along – essentially on its own volition. Prepare for the ride, hang on and finish it out. As organizers, once it starts, you can't easily change the meeting plan. Some rides are more exciting than others. Be as prepared as possible.



Continued on Next Page

Yet another point...

The donuts were late getting here. The slide projector is locked away in the A/V cabinet. The keynote speaker is jammed in traffic. The computer program is not loading. There're still lots of people in the registration line. The Mayor is on his/her way to give the welcoming address. I could never list all the unexpected things that can jam a meeting. My second analogy once the meeting starts, it's like a tree in a storm. The tree must bend and flex, giving to the storm's pressures, but the tree must endure and after the storm passes, still be standing. Things, both big and small, will go wrong in most meetings - guaranteed. It is impossible to anticipate every glitch. How organizers and speakers adapt to problems goes a long way in determining how the participants evaluate the meeting's outcome.

A success story (so far)...

I hope I am not telling too many tales here, but I would like to describe a successful meeting that has faced all the challenges I described above - The Tri-County Beekeepers' Association (TCBA) Annual Workshop held the first weekend of March every year at Ohio State University, Wooster, OH. While this may sound like an advertisement for the meeting, I don't mean that to be the reason for this discussion. Last March, there were a few more than 700 participants at the one-day workshop, technically making it the largest beekeeping meeting held in the U.S. last year. The workshop organizers are frequently asked for the secret to attracting and conducting such a large meeting. If there is a secret, it is not obvious to me. A remarkably small number of club organizers arrange for the speakers, meals, facilities, and topics. On the day of the meeting, club volunteers coalesce into an experienced team and cooperate to conduct this large bee training session. While I am not the club spokesperson, as the university representative, I have been involved in the workshop since 1978. It appears to me that the foundation pillars for this successful meeting are:

1. Advertised widely and always held the 1st March weekend.
2. Always held at the same place (OSU, Wooster, Ohio).
3. One day long (9 - 3).
4. One or two nationally-known speakers addressing practical topics with many other specialized speakers covering other topics.
5. Lunch provided for about 50% of the attendees.
6. Economically priced.
7. Extensive commercial exhibits
8. 2-tier educational system (extensive elementary and advanced topics)
9. No business meeting of any kind, and NO politics.
10. Comfortable meeting facility with a tested computerized pre-registration procedure.

If you can see secrets in the list above, please point them out to me. A second Ohio group, The Southwestern Ohio Beekeeper School always meets the second weekend of March near Cincinnati and is similarly successful. But this group has not had the opportunity to meet at the same place each year. That meeting averages 300-400 participants - a very respectable turnout.

It has taken time

The attendance at these meetings did not develop overnight, but has literally taken 25 years to this point. During those 25 years, the groups have had lunch not show up on time, speakers not show up at all, late winter blizzards, and the requisite temperamental PA systems. But on the positive side, they have successfully conducted thousands of hours of beekeeping training on every common bee topic.

Summary

Organizational experience is not easy to acquire. Good meetings don't just happen. Meetings have personalities and moods that can't be readily manipulated. And as usual in all beekeeping endeavors, good luck is always helpful.

By the way, I was dead-wrong. The meeting described in the first paragraph was well-attended and the organizers were happy with the effort. All went smoothly. What should I say? ☺

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

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CRAZY COLORFUL CAPS

Ann Harman

Bonanza! That's our response to an absolutely overwhelming amount of something. In this case we can shout "bonanza!" for the incredible assortment of caps available for our friendly squeeze bear. Yes, I know that you usually sell bears in yellow caps with a red spout cover. And, in fact, customers are accustomed to bears dressed that way. But is that because that's all they've ever been offered, or what they really like? Some of you may not even sell bears. Now is the time to expand your market and the bear will help you do that.

You really can increase your sales by using different colored caps. Customers probably haven't given much thought to buying squeeze bears full of delicious honey except for their own tables. But many of these customers are involved in various activities or occasions where a useful bear full of honey would make a great addition. It is going to be up to us to discover and promote this market.

Let's take a look at a few of the various activities or occasions where a squeeze bear could be used. Gift baskets (either made by you or someone else), awards banquets, athletic events, baby showers (not honey for the baby but for the mother-to-be), retirement parties, senior citizen organizations, birthdays, anniversaries, weddings, promotional events, think tanks, neighborhood events, new neighbors, thank yous – you think of more.

In addition you have the various holidays – such as Christmas, 4th of July, Memorial Day, and then other occasions – such as Valentine's Day, all sorts of harvest festivals, St. Patrick's Day, Halloween. The easiest way to find calendar events is to look at a calendar that seems to have something written in for almost every day.

Now for the source of the clothes for your bears. Precision Packaging of Stockton, CA, has caps in 15 different colors. You can see their ad in *Bee Culture* or visit their web site at www.bluemagic.com. Contact this company for information about the colored caps for bears.

Just think – 15 different colors. Not only can you have a cap and spout cover in one single color, but you could mix and match caps and spout covers. I can't even begin to tell you how many color combinations

you could have.

Some beekeepers will grumble at the thought of having an assortment of colors of caps on hand and at the cost of keeping such an assortment. Just remember that your costs must be covered by your prices. After all, if you are selling to a specialty market you can expect to charge accordingly. And what is a specialty market? Well, look above at some of the suggestions – athletic events, senior citizen organizations, anniversaries of various kinds, etc.

One other suggestion – split an order with another beekeeper or with your local beekeeping organization. In this way you can take advantage of price breaks or minimum orders. Besides, you probably do not need to keep 15 different colors on hand all the time anyway.

Will you have to change cap colors on your filled bears throughout the year? Very possibly, but with the inner seal it is not that difficult. For seasonal sales you already know what you will need and can package accordingly. But in exploring new markets you will just have to take a guess. You might be pleasantly surprised at the possibilities your well-dressed bear discovers.

Honey displays generally use glass jars because honey looks so beautiful in the queenline type. However now we have crystal clear bears that can add a bit of variety to a honey display. Here's an idea for those bears. Make a rainbow with color-capped bears. Remember the "Roy G. Biv" way to remember rainbow colors? Well, you can have red, orange, yellow, medium green, blue and purple (violet) caps. There's your rainbow. Now see how you can arrange those bears to lend some color to your display.

A gift basket has endless possibilities. Do you need a gift for someone who is a chocoholic? Wonderful. Fix up a basket with different bars of chocolate and put in a bear with a dark brown, chocolate-colored cap. Stick a few Hershey's kisses to his paws with a bit of tape. How about a gift basket for a coffee lover? You'll need a clever mug and some of the exotic coffees and a bear with a medium brown cap – the color of coffee with some cream.

What can be done with a dayglo orange cap? Children like bright colors and that color is perfect. Small bears with dayglo orange caps could be used as favors at a birthday party or as prizes at some children's

Continued on Next Page

athletic event. You could even have several sizes of bears, big, medium, small. Big with a blue cap – first prize; medium with a red cap-second prize; small with a white cap – third prize. Or have four sizes of bears with the smallest one having green caps, one for everyone who entered and did not win first, second or third.

Are you taking a present to the new baby and the busy mother? Well, you have pink caps and blue caps. Use the appropriate one. The honey is for the busy mother who needs all the energy she can find. Are there happy grandparents helping out? Well, they get a correctly dressed bear, too.

Halloween parties for adults are becoming popular. You can have some bears with black caps and some with deep orange caps. You could use the dayglo orange if you wish, but two colors of orange are available. The deep orange cap combined with a brown cap works well for harvest festivals and Autumn home decorations.

We generally think of white as a color for wedding decorations. Indeed white caps on bears would be perfect for that occasion. But consider snowy Winter decorations where white caps suggest the snow outside. Is there a ski resort near you? Honey is a great energy food, suitable for outdoor activities. Dress your bears for snow and visit the owner of the ski lodge. Those skiers need energy not only for skiing but also for warmth.

Those of you who sell at flower shows can use some bears with dark green caps (plant leaves) and some yellow caps (flowers). Or with the dark green you could have an assortment of colors: blue, pink, purple, red and a few white to look like a flower bed in full bloom. This display would also work for a garden club.

Easter, of course, gets purple caps and yellow caps. Memorial Day and the 4th of July call for red caps, white caps and blue caps. You can even make a flag on your sales table. Don't try to have 50 white stars (50 white capped bears) so just try for the effect of red and white stripes, a blue section with a few white capped bears representing stars. St. Patrick's Day is definitely green caps and white caps. Valentine's Day can be red caps but it could also be pink caps accented with white caps. President's Day is obviously red ones, white ones and blue ones. You can't go wrong with red caps and green caps for Christmas.

Pay a visit to your local senior activities center to find out what sort of festivities they are having. A dinner for the members will probably have table decorations and flowers. Ask what the color scheme will be. Then go home and dress up a few bears to fit the decorations

and see if the center would like to buy some bears for the dinner table.

Take a look around your community at the various functions that involve a color scheme. High schools always have school colors. Athletic teams do, too. The Lions organization has dark blue and yellow. What do the other service organizations have? When you are encouraging these community groups in using honey for their events, take along some properly dressed bears. It is hard to resist a bear wearing the colors of the school, team or organization.

One of the caps is basically colorless, just translucent like some bears. Since that is sort of a nothing color you can consider it a background for something else. Go ahead and make a silly hat with construction paper or felt and fake flowers stuck on. Depending on the occasion little souvenirs can be fastened to the hat. Look in the craft supply stores for ideas. Tie a ribbon around the neck for yet another color.

If you normally have a display of bears on your sales table you can create interesting displays with just a few colors. Make a "frame" with a surrounding row of black capped bears. Inside of that choose two or more colors and make a design, for example concentric rectangles or squares making the bands several bears wide, depending on the size of your display. This arrangement of bears is particularly effective on a table below eye level, such as at a farmer's market or craft fair. You can change the design easily simply by rearranging the bears. You could try a red and black checkerboard with a light beige border. With the dark brown, medium brown and beige you can make an interesting shaded design. Avoid terribly straight lines, squares and the like.

One obvious use of different colored caps is to distinguish different flavors and colors of honey. White can represent black locust, basswood or sourwood. The dark orange (or red) would be tulip poplar. Purple loosestrife, of course, is purple, goldenrod – yellow. Explain to your customers that the cap color makes it easy for the family members to choose their favorite flavor. Also suggest that the children can choose their favorite color for the cap so that particular bear has an "owner." Saves squabbles.

It's time to explore the possibilities of bears wearing colored caps. Have fun with your well-dressed bears. Be sure to take some photos of your creations for publicity purposes. **EC**

Ann Harman is a sideline beekeeper and international marketing consultant.



If you can answer most of these questions correctly you can predict what's going to happen to both the U.S., and to a great degree, the global honey market in the next 12-18 months. Of course the answer to any one of these will influence the answers to the rest, so to be "right" on any one answer you need to be "right" on most of the rest.

The permutations, though not infinite are certainly legion, and packers, producer/packers, beekeepers, pollinators, queen and package producers, suppliers, growers and honey buyers at all levels worldwide need to find the answers, make educated guesses and eventually gauge their business investments and decisions on the future as they see it.

When all this is resolved, and it will be, mostly, a year or so from now, it will be a changed industry. The big will be bigger, many of the small and marginally profitable will be gone, and burned bridges will stay burned. Or maybe not.

And maybe by then, some living

beekeeper, or probably several, will have sold loads and loads of honey for even more than that \$1.75 paid in September. Imagine that.

Back in 1986, John Root was looking for somebody to take over the Editor's chair. Mark Bruner had left, and John was holding down the job until he found a replacement. He was also running a multimillion dollar candle and bee supply company, so his hands were more than full.

His search included a call to Ed Weiss, a prominent Root Bee Supply Dealer in Connecticut at the time. Ed and I had worked on a couple of successful projects prior to this while I was living in that state, and my name came up in his conversation with John. The rest, as they say, is history. And not quite 17 years later I'm still here.

This issue marks the 200th time we've put one of these to bed. Two hundred articles like this one, 200 cover photos, 200 deadlines. And a multitude of regulars have

come, and gone 'Older But Wiser, Charlie Koover, Charlie Mraz, Glen Gibson, Roger Welsh, Elbert Jaycox, Roger Morse, Steve Taber, Dick Bonney. Others have been here nearly as long, or even longer Clarence Collison, Ann Harman, Richard Taylor, Tom Sanford, Mark Winston, Jim Tew. I've been privileged to work with the best there are since I've been here. Even so, after all this, I'm still the new kid on the block. Joe Graham and Troy Fore were both in place when I arrived, and both are still doing their thing.

I doubt I'll be around for 200 more, but without a doubt, this is still the greatest place to be that I can imagine. I've been pretty fortunate. Thanks Ed, and thanks John.

Ed Weiss

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GLEANNINGS

NOVEMBER, 2002 • ALL THE NEWS THAT FITS

Higher Honey Prices Aren't Permanent IMPROVE YOUR BOTTOM LINE SKILLS

If growers are willing to learn, adapt and change, they can improve their income and their operation's bottom line. And the first step toward improving sales is to construct a marketing plan.

Marketing can have a strong effect on the bottom line, according to Mary Donnell. For example, she said, if a three bay lettuce greenhouse is able to increase its selling price by 10¢ a head, they can see an \$18,000 per year increase in income.

Donnell, of OH State Univ. Extension, presented her tips at the OH Fruit & Vegetable Growers Conference & OH Roadside Marketing Conference this year.

"Becoming a better marketer is easy, if you keep an open mind, learn new skills, and develop and follow a plan," she said.

The first step is to assess your shortcoming when it comes to marketing. Possible roadblocks to marketing success include: no mission statement, perfectionism, procrastination, lack of goals and confidence, lack of customer service skills or an inability to deal with rejection. Once your shortcomings are listed, you can create steps to overcome them.

Identifying who the customers are and what their needs and wants might be is the basis of all marketing plans, said Donnell. Marketers determine their target market by identifying the geographic area, age, gender, income, and family status of consumers in the area. Possible resources include the internet and local libraries for more detailed demographic information.

Marketers should use a strength, weakness, opportunities, and threat analysis to evaluate their business's strengths, weaknesses and opportunities for success. Also, growers need to know what the strengths and

weaknesses of the competition are. Important information includes competitor's price, promotions, packaging, delivery capabilities, quality, and business practices.

"As you gain an understanding of your competition and potential customers, you will be able to identify the part of the market that is the best fit for your products and potentially the most profitable," said Donnell. "This target market will determine the products, benefits, and customer service mix that will be most successful and profitable."

Your plan should identify the four P's of marketing: product, price, promotion and place, said Donnell. Products may include intangibles such as service, freshness, locally grown, frequent deliveries, no temperature abuse and no pesticides.

Target markets determine promotional strategies. Marketers should determine the cost of different promotional strategies and make estimates of the results of different methods.

"No Marketing plan is complete without specific and measurable goals and objectives," said Donnell. Objectives should be specific, measurable, attainable, realistic and tied to a timeline.

Farm marketers should make and use an effective marketing calendar, said Donnell. A calendar would plan actions for specific results and track activities and results. The calendar should include who is responsible for implementing strategy and a date when the strategy will be put in place. Keeping good records allows easier evaluation of success and failure.

"An effective marketing plan requires time, money and effort, but it is vital to making sound decisions and staying competitive and profitable," said Donnell.

How Sweet It Is NEW SPORTS DRINK WITH HONEY

The National Honey Board (NHB), working in conjunction with the Food Processing Center at the University of Nebraska, has developed a refreshing sports beverage formula with similar nutrient profiles of major branded options. The new formula closely resembles the nutritional value of currently available bottled sports beverages, but with a higher level of potassium than most. "Some of our preliminary research shows that honey could be an effective pre-workout energy source that does not induce hypoglycemia," said NHB director of scientific affairs, Marcia Cardetti. "As part of this same research, we have also seen that using honey as a carbohydrate source during exercise significantly improved performance and power during endurance cycling trials." Another study suggests that combining honey with a protein supplement may boost post-workout recuperation and favor better blood sugar maintenance after exercise. These and other scientific inquiries into the relationship between honey and the endurance athlete led to the decision to

investigate a sports beverage formula supplemented with honey. "Athletes are already using honey as a source of energy," Cardetti explained. "We are applying it to a potential product that will also help in the replenishment of fluids." The formulas currently include a honey and orange and honey and lemon option. Each delivers a nearly equivalent amount of carbohydrate and calories to manufactured sports beverages, with a superior delivery of potassium, averaging 85mg. compared to an average 40mg. for other popular products. "We are also excited about the taste," Cardetti said. "The honey and fruit combination make this deliciously refreshing and thirst-quenching." For more information on the formulas, contact the NHB director of marketing, Bruce Wolk, at 800-553-7162. Based in Longmont, Colorado, the National Honey Board is a research and promotion board that drives the demand for honey generically through marketing, research, promotion, and advertising.

Research On Honey's Healing Properties NHB PUBLISHES SCIENTIFIC COMPENDIUM

Humans have used honey for more than 8,000 years according to documented sources. This natural sweetener has been used for everything from healing wounds to soothing coughs.

The National Honey Board has summarized the numerous research studies conducted on honey in a published compendium titled "Honey Health and Therapeutic Qualities."

The new 28-page document sets

the foundation with a narrative of honey's history including references dating as far back as 460 BC with Hypocrites applying honey as a wound healer. Other research includes honey's antimicrobial characteristics and the positive effects on disorders such as ulcers. The antimicrobial properties as they apply to food safety and food-borne pathogens are also outlined.

An emerging area of research
Continued on Page 59

AWESOME MEETINGS

American Honey Producers Association - January 7-12, 2003 Baton Rouge Marriot, Baton Rouge, LA

Tuesday, Jan. 7

8:00 a.m. Registration, Board Meetings.

6:00 p.m. Get Acquainted Reception

Wednesday, Jan. 8

9:30 Update on Antidumping, *Mike Coursey*;

5:00 Update of Assessments, *Donna Kinsella*; President's Address, *Lyle Johnston*; Keynote Address, *Bob Odum*; Cooperation State Agencies, *Patty Elzen*; Molecular Biology, *Kate Aaronstein*; Effect of Fungicide, *Frank Eischen*; Update on Research, *Gloria DeGrandi-Hoffman*; Current Research, *Diana Sammataro*; Honey Bee Diet, *Gordon Wardell*

Thursday, Jan. 9

8 - 4 Honey Bee Semen, *Anita Collins*; Residues in Honey & Wax, *M. Feldlaufer*; Honey Bee Genomics, *Jay Evans*; Coumaphos on Queens, *Jeff Pettis*; Check Mite Strips, *Richard Hack*; Insurance, *Roger Starks*; Good Queen Bee, *Clarence Collison*; LA Beekeeping, *Jimmy Dunkley*; Crop Pollination, *Bob Danka*; Resistance to Varroa, *Lilia de Guzman*; DNA Sampling, *Pam Gregory*; Russian Honey Bees, *Tom Rinderer*

Friday, Jan. 10

8 - 4 All Day Tours; Honey Bee to Agriculture, *Ed King*; Status on ARS Labs, *Kevin Hackett*; LSU and USDA Lab, *Bill Brown*; Russian Bees, *Tom Rinderer*; Group Discussions

Saturday, Jan. 11

8 - 4 Apitherapy Society, *Jim Higgins*; Lazy Beekeeping, *Don Smoot*; Pollination, *Brett Adee*; Future of Sioux Honey, *Jerry Probst*; Business Meeting; Board of Directors

Sunday, Jan. 12

8:00 a.m. Executive Board Meeting

For more detailed information contact The American Honey Producers Association, P.O. Box 3, Webb, MS 38966, 662.375.9966.

American Beekeeping Federation January 12-17, 2003

Westin Crown Center Hotel, Kansas City

Sunday, Jan. 12

2:00 p.m. Kids & Bees Program; Board of Directors; Early Bird Slide Show, *Sharon Gibbons*

Monday, Jan. 13

9:30 Opening Ceremonies/ President's Address, *Pat Heitkam*; Legislative Report, *David Ellingson & Fran Boyd*; Honey Queen Report; Research Report, *Danny Weaver*; Special Interest Groups; Commercial Beekeepers, *George Hansen*; Package Bees & Queens, *Gus Rouse*; Honey Packing, *Rick Sutton*; Hobbyists, *John Talbert*; Welcome to Kansas City/ Honey Queen Reception

Tuesday, Jan. 14

a.m. Auxiliary Breakfast Meeting; Bears, Bees & Barcodes, *George Hansen*; Beltsville: Resistance, *Mark Feldlaufer*; Pesticides & Queens, *Jeff Pettis*; Genes & Health, *Jay Evans*; Bees for the Future, *Anita Collins*; Tucson: IPM & Varroa, *Diana Sammataro*; Nutrition & Healthy Bees, *Gloria DeGrandi Hoffman*; Africanized Bees, *Gordon Wordell*; Antique Show & Bee Market; Report from Canada, *Tim Wendell*; Mite Control Panel, *Bob Stevens*, *Steve Forrest*; Honey Promotion, *Sharon Gibbons*, *Clint Walker*; Fires, *Pat Heitkam*, *David Ellingson*, *David Hackenberg*; Forum on National Honey Board

Wednesday, Jan. 15

8 - 4 Second Generation, *David Ellingson*; Weslaco: Better Science, *Patti Elzen*; Sampling for AFB, *Bob Cox*; Coumaphos, *Frank Eschen*; Reduce Varroa, *Marion Ellis*; National Honey Board; Baton Rouge: Review, *Tom Rinderer*; Genome Project, *Kevin Hackett*, *Gene Robinson*, *Danny Weaver*; Radical Changes, *Marla Spivak*

Thursday, Jan. 16

8 - 4 Education Workshop Sessions; ABF Business Meeting

For more detailed information contact The ABF 912.427.4233, www.ABFnet.org

NORTH AMERICAN APICULTURAL RESEARCH SYMPOSIUM

2002 Joint Annual Meeting of CAPA, AAPA, AIA, CHC, OBA, NYBA, December 2-7, 2002

Sheraton Fallsview Hotel and Conference Centre, Niagara Falls, Ontario Canada

Monday, Dec. 2 - Wednesday, Dec. 4

Arrival and Registration, Business Meetings, & Trade Show Opens

Thursday, Dec. 5 - Session I - Integrated Pest

Management - Sponsored by Univ of Guelph

a.m. *Dr. Ingemar Fries*, Beekeeping & Drugs; *R. Underwood*, Formic Acid; *M. Wotking*, Apigard; *K. Delaplaine*, Varroa Thresholds; *J. Parkman*, Varroa Thresholds; *M. Hood*, Small Hive Beetle; *F. Eischen*, Sampling AFB

Session II - Colony Management - Sponsored by Medivet

p.m. *Keith Delaplaine*, Apis Mellifera as a Managed Species; *H.R. Mattila*, Pollen Quality; *K. Mackenzie*, Blueberry Pollination; *S. Dedej*, Blueberry Pollination; *J. Harris*, Declining Population Growth of Varroa; *T. Webster*, Bottomboard Screens; *M. Ellis*, Using Inert Dust; *P. Giovenazzo*, Fluvalinate Aerosol; *J. Bromenshenk*, Colony Behaviors; *N. Ostiguy*, IPM Tactics

Friday, Dec. 6 - Session III - Queen & Bee Stock Issues - Sponsored by Bee Culture

a.m. *Marla Spivak*, Nothing Less Than A Revolution; *G. Wilson*, Evaluation of Russian Honey Bee Stocks; *W. Mangum*, Attendant Bees, Second Queens & Drifting Bees & Queen Introduction; *J. Pettis*, Pesticide Residues in Wax on Queen Rearing; *G. Otis*, Resistance of Canadian & French Honey Bees To *Varroa destructo*; *J. Harbo*, Proportion of mites in brood as a Mechanism of Resistance; *A. Melathopoulos*, Breeding for Hygienic Behavior

Session IV - Resistance, Residues and Reality Sponsored by Bayer

p.m. *Camilla Brodsgaard*, Detection, Tolerance & Alternative Control Methods of AFB; *D. Nelson*, AFB: Evaluation of New Antibiotics; *J. Bailey*, Sweet Corn IPM; *P. Elzen*, Pesticide resistance in Varroa; *R. Rivera*, Fungicide residues in honey bees; *S. pernal*, American foulbrood disease severity using Spore Levels; *J. Kemp*, Bee Health

For information on registration contact Ontario Beekeepers' Association, 35703 Pavilion Rd., RR 1, Bayfield, Ontario Canada N0M 1G0; www.ontariobee.com or www.honeycouncil.ca. Contact the hotel directly for accommodations at 877.353.2557 or 905.374.1077

GLOBAL WRAP UP

NEW ZEALAND – The cost of pollination services for New Zealand orchardists is rising some 45 percent because of the effect of the *Varroa* mite.

Varroa has wiped out up to 20 percent of commercial hives in the past year.

The cost of protecting hives from the mite has led to the rise in charges for the coming southern season.

National Beekeepers Association vice-president said she had raised her fees this spring to NZ\$100 to NZ\$130 a hive from NZ\$70 to NZ\$90.

The *Varroa* mite was found in New Zealand in April 2000.

The *Varroa* mite is continuing to spread in the southern North Island area.

The Ministry of Agriculture said its *Varroa* surveillance program had detected an infestation of the *Varroa* bee mite at an apiary north of Wellington. Two other infestations of *Varroa* have also been found further north.

A *Varroa* Movement Control Line is in place across the North Island that restricts the southward movement of beehives and associated equipment.

The latest survey of the southern North Island began in May and targeted about 450 apiaries.

Ministry *Varroa* program coordinator Paul Bolger said it was expected the survey would detect further instances of the spread of *Varroa*. Most finds thus far have been within six miles of the control line and probably result from natural spread.

The ministry and the National Beekeepers Association will re-evaluate the movement control policy and conditions following the latest finds.

"The control line has remained in place now for two years and has been much more effective in slowing the spread of *Varroa* than most beekeepers expected," Bolger said. "We know from international experience that movement controls can never permanently stop the spread of *Varroa*. The control line has effectively given beekeepers in the southern North Island a breathing space to prepare for the eventual arrival of *Varroa*." – Alan Harman

PUERTO RICO – The African bees had reached the Caribbean and West Indies.

Mr. Juan H. Reyes Horta found a colony of African bees in his yard.

Mr. Juan Borges, director of the Civil Defense of Santa Isabel, says that Mr. Reyes Horta (age 67), was killed by the insects.

Puerto Rico, a Latin American nation, is a protectorate of the United States of America since 1898.

Lewis Manuel Medina

IRELAND – The Department of Agriculture has ended a ban on bee imports into Northern Ireland intended to prevent the introduction of the *Varroa* mite.

The discovery of *Varroa* in County Down in April showed the mite now is established in Northern Ireland.

Until the discovery, Northern Ireland was the only area of the British Isles considered free of the mite.

The department said that given the presence of *Varroa* the prohibition on imports could no longer be sustained. – Alan Harman

The Department now is operating a control licensing system requiring application by potential importers and laboratory examination of any bees introduced under license.

Beekeepers now may apply to import queen and worker bees from other EU member states and from specified countries in the southern hemisphere that have excellent proven bee health status.

The bees must come from a *Varroa*-free enterprise and be accompanied by an appropriate bee export health certificate.

– Alan Harman

New South Wales – Beekeepers are looking to see if they are eligible to apply for freight assistance under the state's emergency drought program.

They are basing their hopes on a precedent late last year when for the first time the government formally recognized bees as livestock and affected bee keepers received government help to rebuild their colonies after massive wild fires.

With 82 percent of N.S.W. now drought declared the state government announced a package of assistance for farmers who have spent six months in drought conditions. It includes up to A\$20,000 a year in subsidies for transport of feed and water.

The New South Wales Apiarists Association said it was a challenge to find enough feed for the bees. Honey is selling at a record A\$3.50 a kilogram.

The drought is creating such a shortage thieves are targeting beehives.

Capilano Honey Ltd. managing director, Roger Masters said the shortage was creating what he called "a bit of a crisis" as he has seen the price the company pays for honey rise 105 percent in the last 14 months.

Capilano usually buys 17,500 tons of honey a year but this year expects to be only able to obtain 10,800 tons. As a result, for the first time in its 50-year history Capilano is importing honey – from Argentina – to blend into generic brands. It will use only Australian honey for its Capilano brands.

"Some of that Argentine honey has in fact been redirected and re-exported out of Australia to customers that require honey," Masters said. "They will take a blend of honeys whereas there are some markets overseas who require only Australian honey – particularly for example in the Middle East and the UK."

Australia's 3,000 commercial beekeepers and thousands of amateurs usually produce about 26,000 tons of honey a year. – Alan Harman

NHB ... Cont. From Pg. 57

for the National Honey Board concerns honey as a source of energy. Conclusions in the compendium note that honey "potentially offers many of the performance advantages of the sports beverages and gels that are commonly used by athletes."

Additional research topics that are presented in the compendium include antioxidant activity including its use for food preservation and human health, prebiotic properties and other areas currently

under investigation, including dental health.

The document is now available for health care professionals, food scientists and manufacturers and will also be posted on the Honey Board Web site at www.nhb.org/foodtech.

Based in Longmont, CO, the National Honey Board is a research and promotion board that drives the demand for honey generically through marketing, research, promotion, and advertising.

SHARON GIBBONS HELPS NZ BEEKEEPERS

Missouri beekeeper Sharon Gibbons is toured New Zealand advising local apiarists how to prosper while living with the *Varroa* mite.

Gibbons who owns a 750-colony operation, is a producer member on the U.S. National Honey Board representing eight states. She first found *Varroa* mites in the mid-1980s but after a few rough years she was able to expand her business.

How she did this is the subject for a series of nine workshops she

conducted throughout New Zealand for the country's National Beekeepers Association.

The costs of the visit were being paid through a grant from the Ministry of Agriculture's sustainable farming fund.

The overall goal of the project is for beekeepers to strengthen their businesses by using an expanded range of income streams so that they can survive and prosper after infection by *Varroa*.

This in turn means beekeepers will be able to offer better

Continued on Next Page

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THE NEW ZEALAND BEEKEEPER. National Beekeeper's Association of NZ. Write for rates & indicate whether airmail or surface. NZ BEEKEEPER, Box 3079, Napier, NZ.

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BOTTOM ... Cont. From Pg. 64

and the guys have to warn me to cool it.

In September we took off honey on a day when it turned windy and partly cloudy and cool. The Bee-go wouldn't drive the bees down, but we had an empty truck to fill, so we pushed on. We had to bang some bees out of the supers. They threw a fit. Bees robbed. They stung. Gabe put on his gloves. Then he got bees in his pants again. It was pure chaos. Before we finished, I took a neck shot inside my veil. Even Paul had a wild look.

When we pulled away, Paul said, "That's as many bees as I've ever seen on a load of honey." We drove a mile or two, then stopped for lunch and to let some bees fly home. A few joined us in the truck cab. I'd just finished my sandwich when Paul said, "These bees are nasty. We'd better get out of here."

As he started the truck, a bee flew up my nose. The pain pulsed right through my eyes. I thought she stung me inside my nostril, so that's where I tried to dig out the stinger. Some time later, after I stopped screaming, in a matter of fact way, Paul said, "That stinger's on the end of your nose."

Gabe, who is 19, has read Carlos Castaneda's books about the Yaqui Indian "Don Juan." This was required counterculture reading in the seventies. Don Juan is the master sorcerer and netherworld traveler, Castaneda the anthropologist and eager apprentice.

Once again we're bouncing down a dusty road, and out of the blue, Gabe says, "Paul is kind of like the Don Juan of bees, and Ed, you ask a lot of questions, so you're like his student." I balk. I explain that there is a fundamental difference — that being that maybe Don Juan doesn't exist and never did. After all, the only person who claims to have ever seen him is Castaneda.

Gabe holds his ground. "Maybe," he says, "but the stories are still true."

This is a fairly sophisticated point of view for a teenager, but I don't buy it. Besides, Castaneda portrayed himself as a pretty hapless pupil. I at least know a little. I know not to get stung on the tip of the nose.

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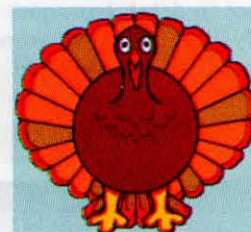
| | |
|---------------------------|--------------|
| CC Pollen | Inside Front |
| Cowen Mfg. | 22 |
| Dakota Gunness | 22 |
| Golden Bee Products | 22 |
| Humble Abodes | |
| Woodenware | 9 |
| Perma Comb | 18 |
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| Exquisite Soaps | 14 |
| Fisher Honey Sticks | Ins. Back |
| Honey B Healthy | 55 |
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| R. M. Farms | 18 |
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We bounced down some dusty road on our way to one of Paul's honey bee yards, and out of the blue, Paul said, "The most painful place to get stung is on the tip of your nose."

I said, "I can think of a more painful place. Have you ever gotten stung there?"

"Yup," he said. I've been stung about everywhere on the human body you can get stung. I've gotten stung inside my mouth. I've swallowed bees. The tip of your nose is the worst."

This proves that things are not always as they might seem.

You'd think that after awhile beestings would stop feeling like a hot needle and feel more like, I don't know, maybe a mosquito bite. They never do. You could hardly be more comfortable around bees than Paul, so it always reassures me when he yells, "Ow! That bugger stung me right through my shirt." Beestings hurt. They always will. Get used to it.

When he went to work for Paul, Gabe discovered he had a little problem. He swelled up whenever he got stung. He'd get stung on the hand and hardly be able hold onto his hive tool the next day. You'd think he'd have looked for another line of work. Instead, like a seasick sailor who yet loves the sea, he persevered, suffered and prayed for deliverance.

Gabe refused to wear gloves, and he eventually acquired a beekeeper's natural immunity to bee venom. Now he pauses only long enough to dig out the barbs. One day a bee crawled way up inside his pants, and Gabe did a little quickstep. Afterward he stuffed his pant legs inside his socks, but he never swore, like I do. I admire that. He summarized his centered, good-vibes bee strategy: "Go ahead, bees. Sting me. I don't care." This is pretty Zen, when you think about it, and probably the way to go, if you're a mystic.

Me, I'm not that cool under fire. Once a couple of bees double-teamed me, and as I jumped back, my hive tool flew out of my hand and nearly hit Gabe on the head. He gave me a look that said, "Easy, old-timer!"

I keep 30 colonies at home, but sideline beekeeping and working for Paul are two different things. We start in the morning and work all day. We don't knock off if the wind howls or the clouds blow in. When the bees get feisty, I can't just go inside the house and make a sandwich.

When I started out working for Paul, I didn't customarily wear gloves. There were a couple of reasons for the no gloves. One, gloves can be clumsy for this work. You know that. Two, it's not the cowboy way. OK, I suppose all beekeepers put on gloves once in awhile, say, when they tip over a hive, or deal with a really difficult colony, but mostly gloves are for beginners. Admit it. You don't want anyone to catch you wearing gloves. If your neighbor comes down the road while you're working your bees, you want to be barehanded, in your shirtsleeves.

We all love swarm calls. You roll up in your pickup. Neighbors peer out kitchen windows. The homeowners point to a bush. You walk over in your shorts. Yes, those are honey bees. You shake the little darlings into a super, then go in the house to drink lemonade with the owners, who thank you profusely, tell you how wonderful it is that you keep bees, and absolutely marvel that you're wearing shorts. We're all beekeepers here. We can talk about this.

Before, I'd get stung oh, four or five times a day on the

job. It wasn't so bad. But multiple stings in the same place made me ache. One day when three bees stung me on a dime-sized spot on my hand, it felt like my hand got backed over by the truck.

One day I had an epiphany. It struck me that I'd be a lot more productive, and I'd enjoy my job more, if I just wore gloves. So I do. Maybe this rubs you the wrong way. I'm sorry. Sometimes when Mark gripes about getting beat up by a colony of killer wanna-bees, I say, "Gosh, I didn't get stung once. I must have just been lucky." Then I laugh. He still talks to me.

I admit there is a downside. Sometimes I get so oblivious to angry bees that I get a little sloppy,

Continued on Page 62

The Tip Of Your Nose Is Worse

Ed Colby

BOTTOM BOARD