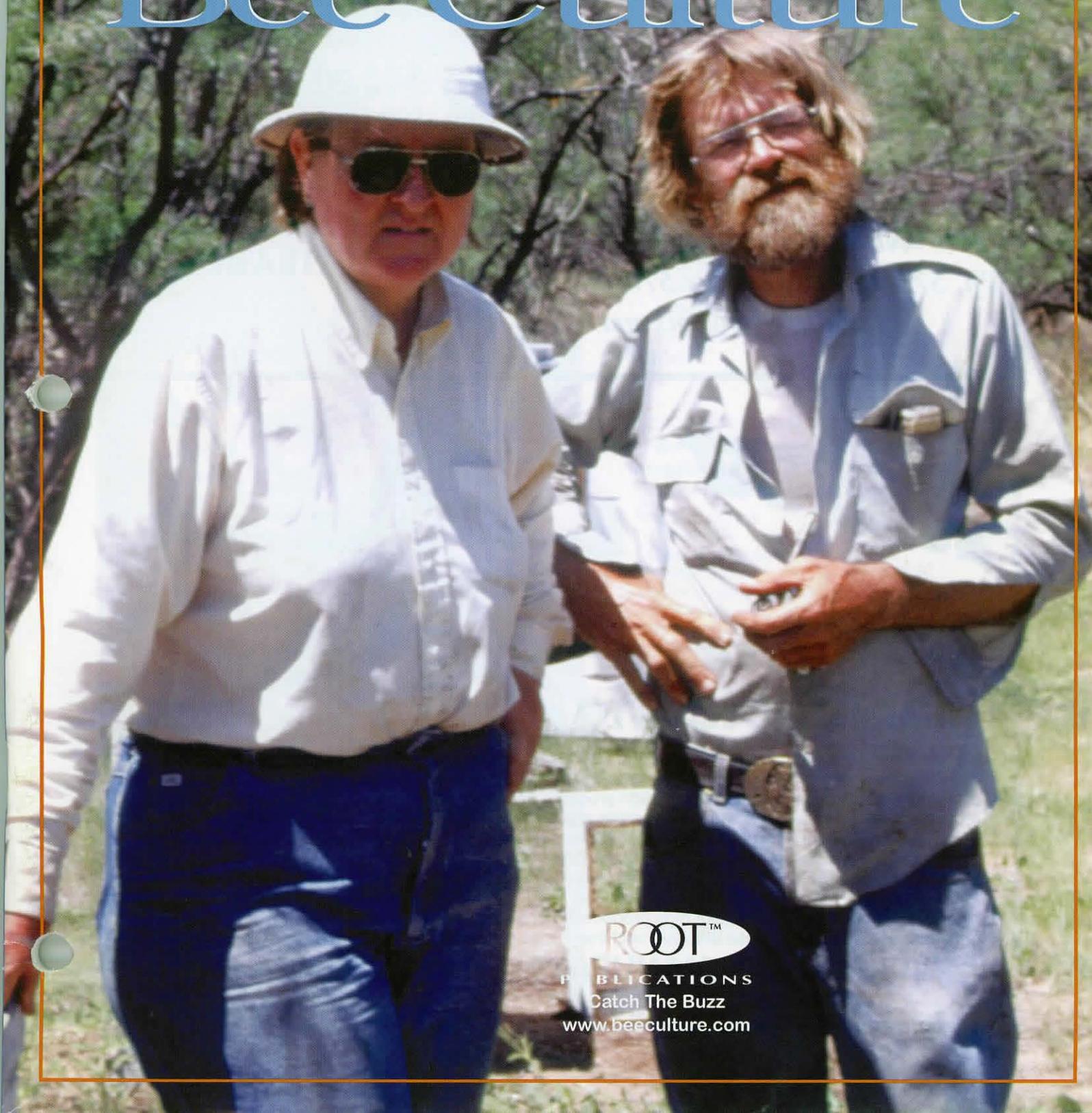


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JUL 2002

# Bee Culture



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# Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

JULY 2002 VOLUME 130 NUMBER 7

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Ed & Dee Lusby have been championing small cell foundation for years. Allen Dick shares just how they do it on page 27.

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BEE CULTURE

## KEEP IN TOUCH

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# MAILBOX

## Response To Shilling

After reading the letters in the May issue of *Bee Culture* responding to A. Gary Shilling's article "The Future Of American Beekeeping – Protectionism or Productivity" I decided to add my own thoughts to the discussion.

I believe Mr. Shilling is right about protectionism being unlikely to save U.S. beekeeping, at least if protectionism is defined in the narrow sense of limiting or placing tariffs on imported products. However, I find it incredible that Mr. Shilling should recommend that apiculture follow in the disastrous footsteps of mainstream American agriculture.

As Mr. Shilling observes, agricultural employment has dropped from 40% in 1900 to 1.5% in 2000. Does Mr. Shilling believe this is a good thing? Apparently so. I have to wonder how Mr. Shilling would feel about a comparable drop in economic consultant employment. Isn't it funny that American Presidents claim to measure success by how many jobs are created, while agricultural economists measure success by how many jobs are eliminated?

Mr. Shilling observes "Our analysis indicates that rapid productivity growth has been the key to the success of American farming." Certainly Mr. Shilling is correct in asserting that there has been rapid productivity growth in American agriculture. Is he correct in asserting that American agriculture has been successful? In spite of his graph showing that gross farm output increased while farm employment decreased throughout the last century, I think not.

The standard story is that technological advances have allowed increases in productivity, which in turn have reduced the number of farmers needed, which in turn has driven the least efficient producers out of business, so that at any given time only the most productive, "fittest" producers remain. Thus, the farm economy is kept healthy and vigorous.

In fact, the technological inputs to modern farming are very expensive. I have to wonder how many farmers have been put out of business not by refusing to embrace the latest technology, but rather by spending money on new technology that didn't give them an adequate return on their investment. How many young men have criticized their fathers for not "modernizing" the farm, and then took over the farm themselves only to lose it due to their inability to make the payments on new equipment?

What is important in determining the success of an enterprise is not gross output but net income. Mr. Shilling believes American agriculture is a great success story because it now consists of a comparatively small handful of farmers who produce so enormous an amount of product that it's difficult to find a market for it all. If modern

American agriculture has achieved such great success by improving productivity, why is the whole American agricultural edifice propped up by massive government subsidies? I'll tell you why: because the technology that has produced the productivity gains in American agriculture is simply too expensive to be competitive with lower-tech agriculture in countries where the cost of labor is very low.

I don't mean to suggest that technology is a bad thing, or that beekeepers shouldn't consider technological improvements. I am suggesting that if beekeepers emulate mainstream American agriculture and uncritically accept the principle that technology leads to productivity which leads to profitability, beekeeping will meet the same fate as mainstream American agriculture. Soon there will be few American beekeepers left. Maybe none, if beekeepers can't convince the Federal Government that honey is an essential commodity.

Beekeepers might do well to adopt new technology, but I think they should be skeptical of any technology that has a significant price tag attached to it. A thorough and realistic analysis of anticipated return on investment before buying productivity-improving technology would have kept many farms off the auction block.

Unlike Mr. Shilling, I believe the salvation of American beekeeping is in improved marketing, not in enhanced production. The de-commodification of at least a significant portion of the honey market should be the number one priority. Varietal honey, locally-grown honey, organic honey, and value-added honey products hold more promise than does producing generic honey for less. The National Honey Board notwithstanding, I have seen little real promotion of honey in this country, and even less promotion of high-value, American-made honey and honey products. If this doesn't change, there is no salvation for American beekeeping.

Robert Suchor  
Belleville, Wisconsin

I was surprised to open my May issue and find my name at the bottom of an ineffectual commentary on Gary Shilling's article from March 2002. Rather than raising pertinent considerations about his views, the letter merely provided a platform from which he constructed a numerical house of cards supporting his position.

Unfortunately, most of the content (<50%) and structure of my original letter was deleted prior to publication. In contrast, Shilling seemed to enjoy a lengthy free hand in his response. Briefly, the points left on the cutting room floor were:

1. Argentina's currency devaluation may have had a significant negative effect on U.S. honey prices if the antidumping duties had not been in effect.

2. Inflation follows currency devaluations and over time will negate the peso's drop in value. As Shilling notes in his response, Argentine consumer prices rose 3.1% in January (37.2% APR). Producer prices are likely to follow a similar trajectory.
3. He is a hobby beekeeper who gives his honey crop away. He is also an investment advisor, and probably has a significant interest in corporate globalization and the destruction of inconvenient trade barriers, namely, antidumping laws. These laws are designed to protect domestic industries from unfair trade practices.
4. His prescription of high-tech productivity enhancements for the U.S. beekeeping industry is "pie in the sky" posturing. The best paths to improved productivity are knowledgeable beekeeping and stock selection programs.

I support the editorial prerogative to edit, but a 50% chop that destroys the impact of a submission is both unfair and inappropriate. Evidently Shilling read my original letter. Unfortunately, your readers didn't have the chance.

Joe Rowland  
Owego, NY

## Clean Honey

The U.S. Honey Market is undergoing renewed pressure from various sources to monitor and maintain a clean, unadulterated and pesticide free product.

This can cause a producer to wonder, and even worry, whether or not his or her product is contaminated or not. The response that most of us surrender to is "hiding our heads in the sand" and continuing to sell honey while not having proven assurance that our honey is clean.

Honey buyers may use this unresolved fear and pressure producers to accept lower prices for their produce and soften the honey market. This "pales" to the damage inflicted upon consumer confidence when polluted honey is discovered and sales nose-dive as a result. Watch the market reaction as honey from China is tested and verified as unfit for consumption.

Anyone can have their honey tested by a food testing laboratory and be assured that their honey is clean. I have had both honey from my extracting supers and brood nests tested for several years and the results are very reassuring. Knowing for certain that my honey is clean goes a long way towards higher returns for my honey.

I suggest that you contact Columbia Food Laboratories, Inc. and set up a test for your honey. Phone 503.695.2287 or Fax 503.695.5187. Other labs are available throughout the U.S.

Steve E. Park  
Palo Cedro, CA

# NATIONAL HONEY BOARD ROUNDTABLE - A FORUM

## SUMMARY

### Participants

American Beekeeping Federation, American Honey Producers Assn., Mid U.S. Honey Producers, National Honey packers and Dealers Assn., Sioux Honey Assn. and Western States Packers and Dealers. (All were invited to contribute to this forum, only three did.)

### Overview

The participants at the Roundtable conference, May 18-19 in Chicago, propose to develop a new research and promotion board to replace the current National Honey Board. The following is an overview of the structure and activities for the new proposed board.

### Role of a Board in the Industry

All groups at the roundtable agreed that quality, protecting the image of honey, research and promotion are the key components of an industry program.

### Representation on the Board, & Alternates

Four Packers (1 of these must also be an importer)  
Two Importers (defined as at least 75% of income from imports)

One Representative of a Honey Cooperative (must be staff, directors or board members of the cooperative)

Two Producers (nominated from qualified national producer organizations)

Alternates will be nominated and appointed for each type of Board seat - two packer alternates, one importer, one representative of the honey marketing cooperative, and two producers for a total of six alternates.

### Nominations Process

Each Board seat and alternate position would require at least two nominated candidates from which the U.S. Secretary of Agriculture would choose.

National organizations (importer, packer, producer) would be "qualified" by the USDA's Agricultural Marketing Service to submit nominations to the U.S. Secretary of Agriculture. (The order will specify the criteria that will be used to qualify as a national organization.) Roundtable participants discussed that individuals who are not members of the certified organizations could also submit nominations to the Secretary. AMS noted that qualifying organizations could be required to solicit nominations from those outside of their membership. This issue should be clarified in the Order. The Secretary would appoint from nominated candidates and would normally give greater weight to those candidates nominated by national organizations.

Packer organizations would caucus to nominate their slate of candidates.

The 1996 Generic Statute may require a geographic element to the producer seats. This will be explored further.

### Penny/lb. Assessment Rate To Start

Assessments will begin at \$.01/pound payable at U.S. Customs for imported honey, and \$.01/pound payable by the packer on domestic product purchases. The rate may be raised to a maximum of \$.02/pound at the discretion of the Board, but no more than ¼ cent/pound per year. Raising the rate would require a Board super-majority (2/3) in favor.

### Production Research

5% of the budget will be set aside annually for a production research project. If the Board does not choose to fund an appropriate project, the money will be returned to the general fund.

### Liability for Bond Repayment

In order to develop and promulgate the suggested program under the Generic Statute, an approximate \$100,000 letter of credit, to cover AMS expenses, will need to be contracted for.

If the new program is authorized in referendum, the \$100,000 could be paid by new program funds. If the new program fails under referendum, each national organization would be liable for those Board seats proposed to represent that sector at the rate of 1/9 per seat as follows:

National Honey Packers & Dealers & Western States Packers & Dealers:

6 seats (4 packer, 2 importer)	\$66,000
Sioux Honey Association 1 seat	\$11,000
Amer. Beekeeping Federation 1 seat	\$11,000
Amer. Honey Producers Assn. 1 seat	\$11,000

An additional approximately \$15,000 for non-USDA costs (Wayne Watkinson's fees) will be paid by National Honey Packers and Dealers, Western States Packers and Dealers and Sioux Honey Association.

There was some discussion about a penalty pool/amount to be paid by any organization(s) that caused referendum failure, but this was not finalized.

### \$250,000 Exemption Level

Packers that handle over 250,000 pounds of honey annually and importers that import over 250,000 pounds annually will be subject to the Order. Domestic handlers will pay the assessment on domestic honey purchases, Importers of Record on imported. The reduction in funding levels from the current NHB program is expected to be about 5%.

Approximately 100 entities would be subject to the Order using this exemption level.

### No Refund Provision

Everyone agreed that no refund provision would be necessary. (This would not include the reimbursement language required to reimburse importers who import less than 250,000 pounds annually, since U.S. Customs will automatically collect the assessments on all imports.)

### Referendum Process - Who Votes?

Only those entities subject to assessments under the new Order (the approximate 100 packers and importers) would be eligible to vote in the referendum for the new program.

Three possibilities to pass a referendum were discussed; majority in favor based upon pounds handled/imported, based upon number of voters, or a combination of the two.

The group was advised that according to the current generic statute language, the pounds voted method appeared to indicate that a majority would compare pounds voted to the pounds in industry, rather than the normal AMS interpretation that a majority would

compare pounds to a portion of voted pounds. This will need to be clarified.

The group agreed to use majority in favor by pounds voted as the criteria for passage.

### **Who Has Oversight?**

Bob Keeney, USDA, indicated that he has requested that Fruit and Vegetable Division fiscal year 2001/2002 (and beyond) indirect costs associated with program oversight be paid by AMS resources. This could potentially reduce NHB oversight costs for this and following years by as much as 50%. In addition, under a new program administered by F & V, if there are less referenda and less industry dispute, additional cost savings could be realized.

The group also decided to request that program oversight for the new Board be moved to the Livestock and Seed Division of AMS.

### **Implementation Schedule**

Wayne Watkinson will complete a draft Order Under the Generic Statute. This will be sent to the person designated by each organization that will be on the steering committee.

On May 28, a conference call was held to receive input regarding the draft Order from those on the steering committee. Wayne Watkinson's office set up the call.

Another draft incorporating changes from the call was to be completed and sent back out to each person by May 31.

During the following week, a letter of support for the Order will be circulated, if everyone agrees. Each group will be asked to commit to the Order in writing at that time. Process should be complete by June 6. The letter will include a formula for the organization's Letter of Credit commitment.

Once the Order is submitted to AMS, a schedule will be worked out. This is followed by rulemaking, publication in the Federal Register, and a comment period, followed by a referendum. If the industry is united in its support for the Order, the AMS process will proceed smoothly - the normal 17 to 24 month process could happen in as little as 12 months.

### **Important Note**

ABF noted that they could not commit to the proposed plan until the ABF Board of Directors had endorsed the plan.

### **From The NHB Chairman**

The recent passage of the continuation referendum allows the National Honey Board to continue serving the honey industry for another five years.

In order to clear up any misconceptions and set the record straight, please consider these facts:

- Per capita consumption of honey in the U.S. increased by approximately 25% from 1990 through 2000
- The NHB carries out many research and promotion projects which are a great deal more than merely generic promotion programs
- The NHB always strives to support the general welfare of those who finance NHB activities.

In spite of this, only 51% of those voting in the recent referendum favored continuation of the NHB.

Is it possible that the narrow margin of passage indicates that only 51% of those voting in the referendum believe that it is important for our industry to research, promote, and protect the image of honey? I don't think so. In my discussions with industry members during the past several years, most have indicated that these three areas are very important. I believe the narrow margin of passage indicates that some in the industry are not satisfied with various aspects of the NHB for a variety of reasons, some real and some perceived. There are those who have misconceptions about some of the Board's activities (some producers have even told me they believed that the NHB promotes imported honey over domestic, which is absolutely NOT true). Some have genuine concerns about other issues (including the nominations process), and there are some who simply don't want to pay an assessment.

The National Honey Board came into existence at the request of the industry. The Act under which the NHB operates can only be changed at the request of the industry. During the months before the last referendum, the National Honey Board promised the industry that if continuation was approved, another roundtable would be convened. The Board wanted industry groups to have the opportunity to suggest improvements to the National Honey Board so that we may better serve the industry. Attendees at previous roundtable meetings in 2000 and 2001 explored industry priorities and suggested areas where the NHB could be improved. But when it came time to "fish or cut bait" last Summer, none of the industry groups wanted to initiate the process necessary to make any changes prior to the continuation referendum in February 2002.

As promised, the National Honey Board convened a roundtable on May 17, 2002 in Chicago, representatives of the American Beekeeping Federation, Mid-U.S. Honey Producers, American Honey Producers, National Honey Packers and Dealers, Western States Honey Packers and Dealers, and Sioux Honey Association met for this most recent roundtable. The National Honey Board Executive Committee was also present to observe and provide information as needed, as were representatives of USDA-AMS.

The industry group representatives agreed that research, promotion, quality, and protecting the image of honey were top priorities.

The attendees also discussed the uncertainties surrounding the current Board including the legal challenge to the constitutionality of NHB assessments and the threat of a termination referendum by petition. The majority of representatives considered these issues serious risks to the future of the National Honey Board. The majority also believed a packer/importer-funded board would be the best alternative to the current producer/importer funded National Honey Board. The proposed new board structure would consist of four Packers, two Importers, two Producers, and a co-op member. This presents a stark contrast to the seven Producers, two Importers, two Packers, and Co-op member of the current NHB.

The roundtable representatives set an exemption level for the proposed new board. Those who pack or import in excess of 250,000 pounds of honey annually would be assessed one cent per pound on all domestic honey packed or honey imported. The assessment rate could be increased a maximum of ¼ cent per year up to



# INNER COVER

I bought some new equipment last winter, knowing I was going to replace a lot of worn out stuff that's been used too long and was ready for the burn pile. I just don't have the room to store inside those old supers and frames I'll repair 'someday' and just piling them outside isn't an esthetic option. Remove and replace is the rule here.

I'd had an eight frame, two 10 framers, and two five frame nucs overwinter and most of the 10 frame stuff was junk,

and most of the five framers needed additional gear. Plus, I wanted screened bottom boards on everything.

So I got a couple of new hives. The first was one of those polystyrene hives available this year from Betterbee and others. The other was the Common Sense beehive, championed by a long-time beekeeper right here in Medina. The quest for the better mousetrap never ceases, which I suppose is a good thing. Many have tried, most have failed, but those that don't add to the store of knowledge. Who knows?

A friend made a whole batch of screened bottom boards for his bees this spring and he gave me a couple to try. Not fancy, but well made and practical. They don't have slide out trays or drawers or other gadgets...just a screened bottom board.

Another inventive fellow from Indiana gave me a deluxe model, with a slide out, rear-mounted tray that doubles as a solid bottom in the winter. So I ended up with enough of these to put on all the 10 framers I have. When I'm done, everything will have a ventilated bottom, even the splits and the swarms that have been added to the mix this spring. All those that had these last year seemed to do well, but it was such a confusing winter that I don't think it was a fair test. After all, the worst winter weather we had last winter, we had last spring.

At the same time I'm slowly getting rid of all the shallows that get used when there's nothing else to use every summer. I'm trying to standardize the operation so that everything with fewer than 10 frames are all mediums, and 10 framers are deeps for brood and mediums for supers. Why? Well, foremost, I can easily buy preassembled medium and deep frames...and not shallows. But mostly, shallows are too many parts for too much work for too little reward. And, I can still lift a full medium. That may change.

The Common Sense beehive violates all these rules though, because nothing from it fits anything at all from anywhere else. Special boxes, special frames, special foundation, special tops, bottoms, entrances. It's its own animal. But, the concept seems to, yes, make sense, so I'll try one and see. I didn't get the conversion kit because I don't have anything to convert.

Trying new equipment is risky business. There is no Consumer's Reports to go to to see how well it works. No UL Laboratories to assure you it is safe. You may be able to find someone who tried one and who has an opinion on it. You may value that opinion. Of course you may not. So then where are you?

Certainly the seller will have good things to say. It stands to reason that if the seller is also the party responsible for the re-

search and design, manufacturing and marketing, the salesmanship may be more enthusiastic than if they are just buying and reselling. There has to be some payback on the investment. Or should be anyway.

Generally, the only references we have are the ads in the journals. Most are pretty upfront with what it is and how it works. Some, like that solar fan cooler are exceptional. Some are a bit less concerned about how well it works, or, if they give opinions, where they came from. I've never been sure if that's because there is a reluctance to share the secrets, or a reluctance to let us know there are no secrets.

Nevertheless, almost always, the market place dictates the life of a product. If it works, it stays. If it doesn't, and repeat sales evaporate, it doesn't stay the course and dies a quiet and lonely death. It's a big graveyard.

However, I encourage you to venture out a bit every year and try some of these new things. Yes, there is a cost. But, there may be a savings. Yes, you could harm something. But, you could save something. And you won't have to rely on the opinions of that know-it-all at the meeting every month. That alone may be worth every penny you paid.

But most important? If you try something and it works, you absolutely need to let the seller know it worked, and how well it did, and how much money it saved you, and how you are a much better beekeeper now because of it. Conversely, if it doesn't work, if it cost you money or bees or honey or time you need to let them know also. Maybe it's a fixable thing and then it will work. Maybe it's a fatal flaw and they need to get it off the market now. If you don't tell them they won't know.

So, go out and sharpen your Handlebar hive tool, light up your fancy new smoker, put on your new all-in-one beesuit and veil and see how those Russian bees are doing in that polystyrene hive. You gotta make some honey this year to pay for all this new stuff.

## New Stuff

a maximum of 2 cents per pound. There would be no direct assessment of producers, and no refunds would be allowed.

It was agreed that 5% of the budget would be set aside annually for production research. If the board does not choose to fund an appropriate project, the money will be returned to the board's general fund.

It is estimated that there are approximately 100 packers and importers who, because they would be required to pay assessments under the new program, would be eligible to vote in the referendum to authorize the packer/importer board. It would then be up to the Secretary of Agriculture to decide whether the new Board supercedes the existing National Honey Board. There will be no producers voting in the referendum unless the producer is also a packer of over 250,000 pounds annually.

This new board would be established under the Generic Statute and could be in operation within a year or so. It was the intent of the roundtable participants that the current National Honey Board continue in operation until superceded by the packer/importer board. Remaining assets of the current NHB could be transferred to the new board in a smooth, orderly transition, so that there is no interruption in service to the industry.

Will this be an improvement to the current National Honey Board? Only time will tell. If the packer/importer board becomes a reality, there would obviously be much less producer involvement as compared to the current Board. If the people who pay assessments into the proposed new program are solidly behind the program, there would be less contention in the industry and that would be a very positive improvement.

As I contemplate the outcome of this meeting, I can't help but reflect back to 1996 when a similar group of industry leaders appeared to agree that certain changes to the National Honey Board *were in the industry's best interest*. The end result of that effort was the referendum for NHB changes held in the Fall of 2000 that was soundly defeated. My fervent hope is that, whatever the final outcome of the efforts begun at the recent roundtable, the honey industry retains the ability to

research, promote, and protect the image of honey. That indeed is the foundation of a successful future for our industry.

Gene Brandi, Chairman  
National Honey Board

*From AHPA President*

As we all know the recent National Honey Board referendum passed by a fraction only due to the Importer pound support. The honey producing beekeepers in the United States that are actually paying the bill voted the NHB out by a two-thirds vote on pounds. Even though the NHB had won by a fraction it was very evident there was little support from the U.S. producing beekeepers, so it is basically dead. The Roundtable was called to receive Industry input as to how to change the existing NHB. The American Honey Producers Association offers NO support to the current NHB in any shape or form. Through the last 15 years the NHB "HAS NOT" increased demand per capita for honey that is "PRODUCED IN THE USA" and it is time for change! The AHPA currently has a pending lawsuit filed against USDA contending that the Honey Research and Promotion and the assessments imposed violates our rights guaranteed under the First Amendment of the U.S. Constitution. We are seeking an exemption from the order and a re-

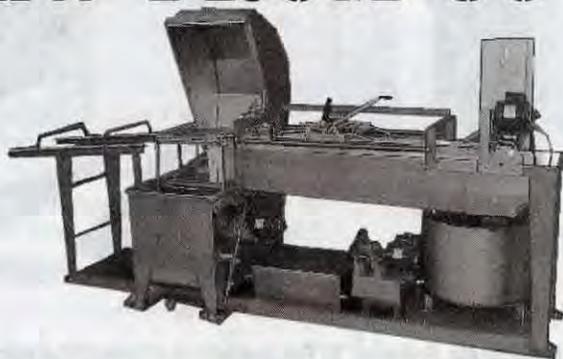
fund of assessments. Also, the AHPA has already started gathering signatures from assessment paying producers and we will call a referendum vote in early 2003 that will terminate the current NHB. We feel that with no question the NHB will be voted out this time.

After the AHPA made clear our intentions and we had no room for negotiation on these issues the roundtable then shifted immediately to a Packer/Importer Board discussion. The National Packers and Dealers Association, Sioux Honey, Western Packers and Dealers and AHPA were all in favor of the Packer-Importer Board. The American Beekeeping Federation is having trouble accepting the change and stated they want the existing NHB to remain as is. Also the ABF has asked for a 60-day extension to plan their position. The ABF has very little choice in the matter, do they support change or stand by and watch the AHPA close the current NHB?

The AHPA believes that if we are to keep the people that are paying the bill interested we must make drastic change and do it quickly. The U.S. honey producers cannot afford to waste any more time or money on the existing NHB. The Packers and Importers have been adamant all along that if the current NHB

*Continued on Page 56*

## NEW FROM COWEN



Cowen Manufacturing introduces the **28-Frame Extracting Solution** into their product line. Designed to accommodate the smaller/side-line commercial producers, it requires a minimum effort to set up. The **28 Frame** system is a turnkey system consisting of the *Extractor, Uncapper, Spinner, Sump, and pump*. When finished, simply roll the caster mounded system out of the way for the season. For information and pricing contact

**Cowen Manufacturing**  
**800.257.2894**



Remember riding on a seesaw when you were a kid? One minute you were up, the next you went down. As long as the person on the other end was somewhat equal in weight and force the game was fun, but when that heavier kid got on, you were out of control of the ride. He could hold you in the air as long as he wanted and make the game miserable for you. But if you were a good negotiator you could talk him into sliding up the board to even out the game.

This is exactly what the honey market has turned into today – a giant seesaw. As producers we were able to even out the weight on the board with the anti-dumping action that increased the price to the domestic producers and actually increased the price to the foreign producers as word got out what honey was worth. Then the truth came out about the quality of Chinese honey and how it has contained harmful products. With these two actions the availability of cheap honey has lessened. It appears this lack of cheap honey has impacted the honey packers. Time will tell but it appears that one large west coast honey packer, who is not going to survive, has left many producers unpaid plus there is the rumor that they owe some importers for Chinese honey they have already packed and sold. Their whole business was based upon price and nothing else and when cheap honey went away so did their market.

It almost makes you want to say "I told you so." The packers used the cheap imports to lower their prices and ran some good domestic beekeepers out of business due to unreasonable prices. Their purchase prices were so low they even ran some South American beekeepers out of business. Now availability is going to be the key. Where do we buy it? Our 380,000,000 pound mar-

ket may shrink, but 200,000,000 pounds will be sold for 100% more than two years prior! Yes the domestic product will sell for 100% more than in the past. This could add over \$100,000,000 into our economy and into this industry. If this would continue for more than two years the domestic production would rise at a level to 300,000,000 pounds or 30% increase. Again what has this increase in price done? It certainly has helped producers, but here comes the surprise, it has helped packers to raise their prices so they can make more money. But on the packers side, there are some other problems. The main selling feature for some packers was and is price and they should get away from that due to availability. Some packers are traveling the world in search of honey and trying to make a deal for a better price on honey. The most endangered species may be the importer. Why put an importer between you and the producer? Any producer, anywhere in the world? All that does is add cost to the final product for a job you can do yourself. The importer provides very little to the product plus he takes plenty for his work. As a packer you have to review costs and this is one that can go.

Lastly, if packers have all of these long term contracts with fixed prices they talk about, there will be

trouble. Again their only marketing tool appears to be price and if they committed to furnish honey based upon inexpensive (and perhaps contaminated) honey imported crap, then their financial troubles will continue.

How do we move forward? Simply, let *each* segment make a profit. Producers can't live with 50¢ to 70¢ honey. We need a higher stable price. Marketers need to sell more than price, they need to sell other benefits and features, and lastly the packers that use non-domestic honey need to get rid of importers and do it themselves. Again the importers only put another set of lips between you and the non-domestic producer. They add cost to a product that you don't need plus how valuable is their service? Their main objective is to replace domestic honey with cheap foreign honey. I don't believe that domestic marketers have that same objective.

*Wise Guy*

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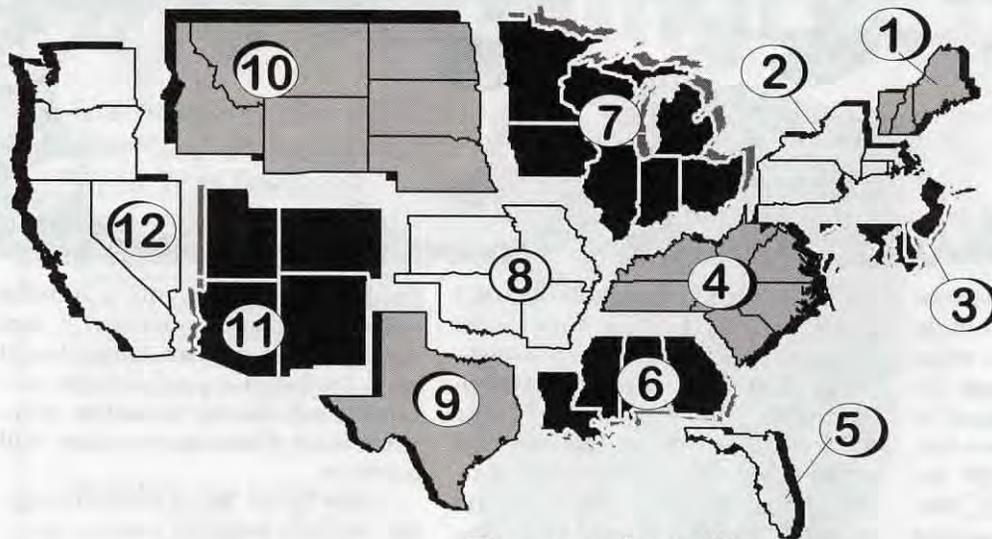
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# JULY - REGIONAL HONEY PRICE REPORT



## Reporter Survey

Interesting data from our Reporter this month when asked about resistance to chemicals, certain treatments used, local or U.S.A. labels and the prices of pints, quarts and gallons of honey they sold.

76% of our reporters live in states where *Varroa* has shown resistance to fluralinate, but only 34% have experienced it themselves, mostly in 2, 4, 5, 11 and 12.

20% live in areas (regions 5 and 6) where *Varroa* shows resistance to coumophos, but only 2% are having the problem in their apiaries.

Fully 50% live in states reporting American Foulbrood resistant to terra, but only 12% are having a problem with it, particularly 8, 9, 11 and 12.

How many treated for *Nosema* this season (last Fall or early Spring)? Only 30%, that's

how many. Good news is that's up from last year and almost double from the first time we asked.

58% use either *Produced in the U.S.A.*, or *Local*, or *(state) Honey* on their label. This is encouraging.

Unconventional containers aren't as unconventional as we thought. Pints - 45% sell them,

price range is \$1.75 - \$5.00, average is \$3.42. Quarts - 58% sell them, range is \$3.50 to \$8.00, average price is \$5.76. Gallons - 66% sell them (we may have to reconsider our price report because of these numbers), ranging in price from \$12.00 to \$28.00. The average price is \$17.94.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.
<b>Extracted honey sold bulk to Packers or Processors</b>																
<b>Wholesale Bulk</b>																
60# Light (retail)	85.50	69.75	75.00	68.17	75.00	75.00	66.67	69.75	120.00	92.00	87.40	69.00	66.67-120.00	79.44	73.02	71.50
60# Amber (retail)	88.33	63.98	68.00	66.88	65.00	73.50	72.00	67.50	90.00	80.79	81.00	65.67	63.98-90.00	73.55	68.82	68.99
55 gal. Light	0.84	1.05	0.84	0.83	0.92	0.93	0.86	0.84	0.84	1.05	0.82	0.82	0.82-1.05	0.89	0.83	0.64
55 gal. Amber	0.79	0.75	0.79	0.70	0.85	0.89	0.83	0.79	0.70	0.89	0.77	0.76	0.70-0.89	0.79	0.72	0.58
<b>Wholesale - Case Lots</b>																
1/2# 24's	32.51	26.92	30.03	31.25	30.03	27.43	30.73	30.03	30.00	30.03	24.00	25.00	24.00-32.51	29.00	35.85	30.02
1# 24's	44.95	39.69	48.00	46.30	33.40	41.50	42.57	47.88	45.00	40.47	47.00	40.20	33.40-48.00	43.08	46.74	43.07
2# 12's	42.95	35.59	47.40	45.21	40.43	40.00	38.94	41.00	43.50	40.43	45.00	43.33	35.59-47.40	41.98	41.97	39.65
12 oz. Plas. 24's	41.97	34.82	48.00	34.87	37.54	42.00	35.77	37.84	45.00	43.00	37.50	39.87	34.82-48.00	39.85	38.50	36.79
5# 6's	41.20	39.76	42.03	45.38	42.03	45.00	43.08	42.03	42.03	37.50	50.00	36.00	36.00-50.00	42.17	47.66	43.59
<b>Retail Honey Prices</b>																
1/2#	1.92	1.67	2.16	2.17	1.29	1.80	1.68	2.16	3.00	2.16	2.55	2.60	1.29-3.00	2.09	2.22	1.81
12 oz. Plastic	2.54	2.36	2.95	2.51	2.50	2.68	2.02	2.23	2.75	2.45	2.64	3.14	2.02-3.14	2.56	2.49	2.26
1 lb. Glass	3.00	2.31	3.00	3.18	2.34	3.05	2.38	2.96	3.33	2.25	3.12	2.62	2.25-3.33	2.80	3.01	2.81
2 lb. Glass	5.38	3.86	4.80	5.49	3.99	4.56	4.16	4.84	5.44	2.75	4.20	4.40	2.75-5.49	4.49	5.00	4.49
3 lb. Glass	7.00	7.23	7.80	7.20	4.99	6.50	5.65	6.53	7.00	7.25	6.41	6.11	4.99-7.80	6.64	6.68	6.20
4 lb. Glass	7.55	6.60	8.22	9.31	8.22	7.03	8.63	8.22	12.50	6.00	9.75	5.00	5.00-12.50	8.08	9.25	7.56
5 lb. Glass	10.75	8.16	9.65	10.49	10.00	10.00	8.91	9.65	16.00	9.65	10.11	8.00	8.00-16.00	10.11	9.70	9.79
1# Cream	3.26	2.95	5.73	5.37	5.73	3.48	3.08	2.75	5.00	5.73	4.56	2.98	2.75-5.73	4.22	4.86	3.26
1# Comb	4.00	3.85	3.60	4.20	4.93	4.17	4.25	3.00	4.93	4.93	6.25	4.50	3.00-6.25	4.38	4.62	4.47
Round Plastic	4.24	3.24	3.60	4.13	3.97	3.75	3.44	3.50	5.00	3.97	4.65	3.85	3.24-5.00	3.94	4.12	3.84
Wax (Light)	2.73	1.95	2.00	2.54	2.28	1.33	1.73	2.00	2.50	4.28	2.70	2.67	1.73-4.28	2.06	2.87	2.39
Wax (Dark)	1.20	1.48	1.75	1.85	1.60	1.25	1.80	1.35	2.00	2.60	1.75	2.03	1.35-5.00	1.47	1.44	2.19
Poll. Fee/Col.	39.38	38.00	35.00	38.20	30.00	38.50	39.29	40.00	24.33	35.55	30.00	38.25	24.33-40.00	35.54	35.77	38.75

# RESEARCH REVIEWED

## Explaining • Defining • Using

Steve Sheppard

*“A recent study by researchers in Germany suggests yet another biological activity for propolis: causing death of the mite Varroa destructor”*

Propolis is a sticky resinous material collected by honey bees from a variety of plant sources. The bees use propolis as a sealant to fill cracks in their enclosures and to line various parts of the cavity. It is often placed around the entrance (where it is believed to serve as an ant repellent) or may be hung in curtains near the entrance where it can affect ventilation. The sealing properties of propolis may be put to use to even “embalm” a dead mouse that expires within the hive. While propolis is integral to the normal life of the colony, most beekeepers in the U.S. consider it to be a sticky nuisance, especially when they attempt to manipulate frames “glued” in place by industrious bees.

As propolis is based on the mixture of resins, exudates and gums collected by bees from local flora, its chemical composition is complex. However, a number of biological and pharmacological activities of propolis have been documented, including activities against bacteria, viruses and fungi. Some propolis components are also known to exhibit anti-inflammatory, anti-cancer or anti-diabetic properties. As a result, there is a long history (at least since ancient Greece) of medicinal use of propolis in some cultures. Even today, beekeepers in a number of countries (excluding the U.S.) receive a substantial price for propolis and actively manage colonies to harvest and market this hive product.

A recent study by researchers in Germany suggests yet another biological activity for propolis: causing death of the mite *Varroa destructor* (Garedew et al, 2002). Garedew and colleagues recount the problems associated with long term use of traditional acaricides (pesticides that kill mites), including the build up of residues in hive products and the development of resistant mites. They then propose that the use of natural products with components exhibiting various “modes of action” might be useful in combating *Varroa destructor*. As propolis is clearly a complex mixture of materials with known

biological activities, the authors set up a series of laboratory experiments to examine possible acaricidal activity.

The researchers obtained propolis scraped from beehives at their University apiary in Berlin Germany. They froze the propolis, ground it in a coffee mill and then made extracts of the propolis in 40% and 70% ethyl alcohol (ethanol). The extracts were made by suspending the propolis powder in the ethanol solutions in a 1:9 ratio (weight to volume) in a rotary evaporator (60° C for 2 hours). This suspension was cooled and filtered and the resulting solution was evaporated to produce dried extracts. The final yield of the extractions was 58% for the extraction made using 70% ethanol (meaning that 58% of the weight of the starting propolis was present after extraction) and 19% for the extraction in 40% ethanol. Thus, considerably less propolis material was extracted by the 40% ethanol treatment than the 70% ethanol treatment. The dried materials were then dissolved in 55% ethanol (solution “B”, in the case of the 70% extraction) or 40% ethanol (solution “A”, in the case of the 40% extraction). Various dilutions of these dissolved extracts were tested in subsequent “bioassays” conducted with live mites. Controls for the bioassays used the equivalent concentration of ethanol (but no propolis extract) and distilled water.

Bioassays were performed in the laboratory on *Varroa destructor* mites that were collected from infested colonies untreated with acaricide for at least 9 months. Treatment of the mites was done by application of 400 micro liters (0.4 ml) of a given concentration of propolis extract solution on a small piece of tissue paper. Six mites per experiment were then immediately placed on the wetted tissue paper. Various times of treatment were used, ranging from 5 to 90 seconds. Mites were then removed to a clean dish and observed at regular times for several hours.

Results of the research indicated there was a short-term effect of the ethanol controls – the mites were narcotized

(stunned) for less than 5 minutes and 100% recovered completely. However, the effects of the treatments with the propolis extracts were dramatic. At the lower concentrations, mites were narcotized for 30 minutes to 1 hour. However, treatment of mites with a 10% solution (weight/volume) of the “solution B” extract resulted in 100% mortality of mites regardless of the treatment time (even with only 5 seconds of contact!). Toxicity was reduced in the extract made using 40% ethanol and the 20% solution (w/v) of solution A resulted in no more than 50% mortality.

The authors conclude, “treatment of mites with propolis causes narcosis and death” They discuss the differences in the extractions and suggest that the 70% extraction was able to recover biologically active compounds that were not extracted using the 40% solution. They reflect on the apparent paradox that propolis is highly active against *Varroa destructor*, when the mites clearly are able to walk around on the propolis without harm inside a beehive. Their explanation is that since most components of the propolis are not readily soluble, the mites are not effectively exposed to the toxic components. They go on to suggest that the use of propolis extract as an acaricide against *Varroa destructor* could “minimize the contamination of hive products by reducing the use of synthetic acaricides”

Further study of this system is required before mite control treatments made with propolis extracts could be recommended. These include assessment of the toxicity of propolis extracts on honey bees themselves and verification of the laboratory results under field conditions. Nonetheless, it is an intriguing possibility that honey bees themselves may collect the raw material needed to develop an effective treatment for *Varroa destructor*. **BC**

Garedew, A., I. Lamprecht, E. Smoltz and B. Strickler. 2002. *The varroacidal action of propolis: a laboratory assay*. *Apidologie* 33: 41-50.

Mark Winston



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“Bees provide the deepest of wells for the writer to draw from, and from those bountiful waters emerge limitless insights into the biological world and the human condition.”

July 2002 marks a personal milestone, my 100<sup>th</sup> column for *Bee Culture*. The first column “Tracheal Mite Research: The Next Generation” appeared in March 1994, and discussed selection for honey bees resistant to tracheal mites. Number 101 next month will be “Metaphorically Speaking,” ambling through classical literature and how our great writers have portrayed bees as metaphors for human life. These two columns are fitting bookmarks, encompassing the range of practical and eccentric subjects that caught my interest as the months and years went by.

Coincidentally, or serendipitously, I just finished reading Margaret Atwood’s new gem of a book “Negotiating With the Dead,” in which she explores why writers write. Of her many explanations, my favorite came out of the washing machine: “Perhaps I have reached the age at which those who have been through the wash-and-spin cycle a few times become seized by the notion that their own experience in the suds may be relevant to others.” She cautions us would-be sages, though, by completing her thought with this warning: “Dangers multiply by the hour, you never step into the same river twice, the vast empty spaces of the blank page appall, and everyone walks into the maze blindfolded.”

Not a month goes by without my bouncing between these two pillars of the writer’s existence, first feel-

ing that I have something to say but then wondering what I have gotten myself into as I struggle to say it well. What smoothes the transition from the suds to the page each month, and sustains my interest and passion as I sit down to write, has been this: Bees provide the deepest of wells for the writer to draw from, and from those bountiful waters emerge limitless insights into the biological world and the human condition.

I began writing for public audiences with bees as the substrate, and beekeepers as my readers. My writing has since grown to broader subjects and a wider readership, but I still return each month to this column, and to the bees and people which continue to fascinate.

Bees and the industries they support provide a microcosm of how we interface with the natural world. Woven into bees are more human subjects encompassing politics, economics, environmental issues, an ambivalent relationship with the natural world, and our ongoing struggle to balance the common good with personal gain.

Much of my earliest writing focused on beekeeping politics, reflecting a youthful optimism that each of us could rise above our narrow personal viewpoints and build a more interactive and communal beekeeping fraternity. I remain grounded in the bedrock concept that we can accomplish considerably more through cooperation than conflict, but find my interest in beekeeping politics has diminished over the

years.

Bees may provide a limitless well for stimulating a writer, but beekeeping politics has proven more limited. Age and experience have tempered my enthusiasm, dulled by too many years of watching unnecessarily adversarial interactions balanced by insufficient dialogue, conciliation and compromise. My attention has shifted elsewhere; today I write less often about organizational politics, although I am still interested in pondering the problems that confront beekeepers.

Beekeeping issues themselves have changed over the last decade. Increasing difficulty in conducting basic bee management has interacted with unfavorable economic factors to drive our industry closer to the fine line between profit and ruin. Today, changes in global trade regulations, escalating problems with honey purity, and growing populations of treatment-resistant parasites and diseases have made the business of beekeeping a perilous one.

These issues alone and together provide provocative seed to grind in the writers’ mill. I find my pen continuing to explore these subjects, but more because of my characteristic writers’ compulsion to comment rather than the expectation that my perspectives will influence how our industry conducts its affairs.

For example, I remain confused about why beekeepers are so far behind the rest of agriculture in adopting integrated pest management

*Continued on Next Page*

**“Dangers multiply by the hour, you never step into the same river twice, the vast empty spaces of the blank page appall, and everyone walks into the maze blindfolded.”**

(IPM) strategies that would reduce the overuse and misuse of pesticides and antibiotics in beekeeping. Through IPM we could have prevented rampant resistance, and even today could diminish the current epidemic of *Varroa* and AFB resistance to miticides and terramycin. While I write often on this topic, I can't say that I've seen much progress towards improving how we use chemicals in beekeeping.

Politics and issues aside, my focus in these columns continues to return to the bees themselves, and what we learn when we study them. It is certainly impressive to realize that despite millennia of research and thousands of scientific publications about bees, scientists continue to uncover stunning new attributes for these tiny creatures.

In my short research lifetime alone, we have learned that bees can hear, have brains that grow and mature with experience, and live in colonies composed of complex subgroups, each of which behaves in subtly different ways from their companions. My own laboratory and those of my colleagues have probed the behavioral and ecological reasons behind the spectacular success of the african bees introduced into Latin America, explored the nature of colony division of labor and the interaction between individuals and the collective, and revealed that the chemical complexity of queen pheromone is well beyond anything we had previously imagined.

A year rarely goes by when one of the two premier scientific journals *Nature* or *Science* doesn't publish an important new finding about bees, side-by-side with papers that discuss high-impact studies on subjects like the human genome or the age of our universe. Bees continue to hold their own at the highest levels of scientific inquiry, testimony to both their intrinsically engaging qualities and the stellar level of researchers still attracted to study these fascinating insects.

Bees are interesting enough, but the beekeepers who keep them and the artists who employ them also surprise and delight me. *Bee Culture* has an international audience, and partly because of these columns I have been privileged to be invited to visit with beekeepers around the globe. My wife and I have met some of our deepest friends this way, and forged bonds that continue to thrive across oceans and continents. Sometimes quirky, always inventive, and rarely boring, beekeepers themselves have been among the greatest rewards that writing has brought, and remain among my most engaging subjects to write about.

I also frequently find myself writing about some of the offbeat ways that non-beekeepers use bees, particularly in art. For example, I recently met Aganetha Dyck, a well-known Canadian artist who puts “stuff” into bee hives and explores how the bees respond to human-created objects like wedding dresses and hockey masks. She and a film crew came to visit my laboratory this past spring to bridge the gap between bee art and science, a subject I'm sure to write about soon.

Other columns have explored movies and television, since the growing Vancouver industry has provided opportunities to get involved in bee wrangling. Besides the chance to feast on the outstanding gourmet catering on set, the film business has provided challenging opportunities to use our knowledge about bee behavior to trick the bees into performing for the camera. Bees are a lot tougher to wrangle than, say, bears, dogs, or babies, and seeing bees from the far end of the camera has stimulated a number of my articles.

It has been most humbling to realize that, despite 100 columns and nine years of writing for *Bee Culture*, I have never been at a loss for a topic. I may some day tire of writing, and may come to see a monthly column as a chore rather than a

pleasure, but when that happens it will not be the fault of the bees. This is not a well that will ever run dry, and it will be the writer's energy rather than the subject that will someday bring these musings to their inevitable end.

I'm often asked why I write, a question that surprises me because I often ask students and colleagues the opposite question, “Why don't you write?” I remain surprised by those who do not write, and continue to have difficulty grasping most people's fear or lack of interest in their own written word.

Ultimately I write for the most personal and intimate of reasons, out of that profoundly puzzling human place where the urge to communicate resides. We all reach out to each other in whatever mode best fits our abilities and personalities. For me that mode is writing, but as special as writing about bees has been, it has been no more than a means to connect with you, the reader.

To all readers I extend my heartiest appreciation, and the hope that each of you finds in bees and each other a similarly deep satisfaction that writing these columns has provided for me. ☐

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

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# Apimondia In Africa IV

## APITHERAPY & GENETICALLY MODIFIED CROPS

Malcolm T. Sanford

Elsewhere in this report I have alluded to the wide range of papers presented at Apimondia conferences. In perhaps no other area is this more evident than in the presentations in Durban under the aegis of the Standing Commission on Apitherapy. In his opening address, the President, Dr. Théo Cherbuliez, said the Commission is only four years old. Its main activities are "humanitarian projects." These have a scientific basis, are considered superior to current "industrial" approach to medicine (e.g. bee products and essential oils vs. antibiotics and cortisone), and are compatible with both the health requirements and economy of regions served. The Commission also does teaching and research on the practice of apitherapy. Most countries where the Commission is dedicating its efforts are in the developing world. The largest current program is in Cuba, but others include Morocco, Burkina Faso, and Cameroon.

The Cuba project implements what Dr. Cherbuliez calls a "green medicine" protocol. Within this context, the use of "pure" products is not considered desirable. It might even be called a "curse," he said, as resistance can be invoked on pure products more so than on mixed ones. The protocol in Cuba is carried out under the sponsorship of universities, involves a large number of patients (2,000) in fourteen regions and encompasses not only bee products, but also essential oils (plant distillates).

In a paper related to the subject of "green medicine," Alhaji Idris M.B. Zaria, Apiculture Extensionist / Apitherapist & Coordinator, Biye Beekeepers Society, Zaria, Nigeria discusses apitherapy as an extension outreach program. According to the author, the two main religious groups in Nigeria emphasize the use of honey, other bee by-products and other ingredients (herbs) for medicinal purposes. For these reasons, the Biye Beekeepers Society in an effort to improve beekeeping as a community based project is using apitherapy as an extension program. The paper lists recipes for using bee products in treating various infections (eye, ear, skin) and high blood pressure and mild diabetes. He concludes: "The prescriptions are simple to formulate using locally available ingredients. Their availability and simplicity in preparation coupled with their efficacy serve as incentive for the bee farmers in adopting beekeeping techniques for higher quality and quantity of their bee by-products, thereby leading to increased health and income."

A special activity of the Commission is development of the Apitherapy CD-ROM, available through the Apiservices World Wide Web site <http://www.beekeeping.com/cd/us/index.htm>. According to the publicity at that site, proceeds from sale of the CD-ROM go towards the Commission's humanitarian works. The material consists of video presentations, anima-

tion, graphics, 1 hour of sound comments and more than 200 screens of information. It costs 59 Euros and can be ordered online using a credit card. For further information, contact: APISERVICES, Le Terrier, F-24420 Coulaures, FRANCE, ph +33 (0)5.53.05.91.13. It is also available for U.S. \$45.00 from the American Apitherapy Society (AAS) <http://www.apitherapy.org/aapsproducts.htm>.

"Apitherapy is the medical use of honey bee products. This can include the use of honey, pollen, propolis, royal jelly, and bee venom." This definition is found on the World Wide Web site of the American Apitherapy Society <http://www.apitherapy.org/>. Dr. Cherbuliez is also President of that group. The Society will hold the annual Charles Mraz Apitherapy Conference July 26, 2002 at Fort Mitchell, KY, just across the Ohio River from Cincinnati, Ohio. It will include lectures and workshops on the use of these honey bee products and concludes with an apitherapist certification test. For more information, contact Kate Chatot, 802.563.3033, email: [jkjchatot@cs.com](mailto:jkjchatot@cs.com) or Sara Cornwall, 914.725.7944, email: [aas.office@verizon.net](mailto:aas.office@verizon.net).

The AAS affiliation with Apimondia's Standing Commission of the same name is not clear to me. I do not remember the Society being mentioned in Durban as part of the activities of the Commission. Nevertheless, the broad definition found on the [apitherapy.org](http://www.apitherapy.org) site fits well the tenor of the presentations at Apimondia in Durban.

For example, Faten K. Abd El Hady and Ahmed G. Hegazi of the Departments of Chemistry of Natural Products and Parasitology, National Research Center, Dokki, Giza, Egypt discussed the chemical composition and antiviral and antimicrobial property of propolis from East Nile in Egypt. The samples showed a wide range of activity against IBDV and Reo viruses, as well as the bacteria *Staphylococcus aureus*, *Escherichia coli*, and *Candida albicans*. In addition, there was large variability in the major constituents (aliphatic and aromatic acids, esters, di- and tri-terpenes, and flavonoids). These Egyptian propolises were also compared to those from France, Germany and Austria in a companion paper. The author's conclusion: "All propolis samples reduced the viral infectivity in varied degree according to the propolis origin. Egyptian propolis showed the highest antiviral activity against avian reo virus and infectious bursal disease virus."

Flavonoids are thought to be the most bioactive antioxidants in propolis <http://www.life.uiuc.edu/plantbio/363/lecture11.html>. Thus, the flavonoid content of Argentinian propolis was investigated by Prof. Enrique Bedascarrasbure and colleagues at the Instituto Nacional de Tecnología Agropecuaria, INTA E.E.A. Famallá. PROAPI. Eighty-four propolis samples were

analyzed from the following regions: Chaquean Park, Calchaqui Valley, Cuyo, Pampean Steppe and North Patagonia. The preliminary results affirm that Argentinean Propolis presents a high content of biologically-active compounds, mainly flavonoids. The authors conclude that significant differences among regions and inside each region increase the need to standardize these propolis types.

Standardization of honey bee products is one of the most pressing issues in apitherapy, as well as other alternative or "natural" therapies (e.g. nutraceuticals and nutritional supplements). Oršolija N., Horvat A. and Bašić I., Department of Animal Physiology, Faculty of Science, University of Zagreb reveal this conundrum in their study of antitumor activity of propolis and related flavonoids. They say, "...it seems clear that antibiotic activities, immune modulatory properties as well as anti-inflammatory, wound healing and antitumor effects may be due to different components of the individual ethanolic or aqueous extracts of propolis. All together at least 200 different structures, constituents of propolis, are defined and belong to terpenes, flavonoids, amino acids, aldehydes and ketones."

**F**rom the myriad of possibilities, the authors selected the flavonoids Caffeic acid (CA) - 3,4-dihydroxycinnamic acid (Aldrich-chemie, Milwaukee, WI, USA), Quercetin dihydrate (QU) (Fluka, BioChemica, Switzerland) and Caffeic acid phenethyl ester (CAPE), obtained by esterification of caffeic acid with phenethyl alcohol in benzene. They tested these against a water-soluble derivative of propolis (WSDP), made by extracting with 96% ethanol, then filtering and evaporating to dryness in vacuum evaporator. The resultant resinous product was added to a stirred solution of 8% L-lysine (Sigma Chemie, Detsenhofen, Germany) and freeze-dried to yield WSDP, a yellow-brown powder. WSDP was stored under sterile conditions at 4°C.

They conclude that the antimetastatic (anti-cancer) effectiveness of WSDP was of higher degree than that achieved by either CA or CAPE. WSDP, CA and CAPE also interfered with subcutaneous (sc) tumor growth, which resulted in prolonged survival of treated mice. QU, however, was ineffective in this respect. When given to mice (30 mg/mouse for 14 consecutive days) QU significantly decreased the number lung colonies, while other compounds were effective in much lower doses. The results indicate that WSDP, CA, CAPE and QU could be a potential useful tool in the control of growth in experimental tumor models. It is likely that the antitumor activity of WSDP is the result of synergistic activities of its flavonoid compounds.

Substances produced by honey bees (royal jelly, venom) are generally more uniform than those collected by colonies (pollen, propolis, nectar). Venom in particular appears to have a bright future in alternative therapies. However, it too suffers from a standardization problem, according to Dr. Cherbuliez, in that in the process of being collected, so that it can be reconstituted and then injected as dictated by some therapies, volatiles are usually lost. Many Russians seem to be in the venom collection business. Over the years I have received several emails asking about how to sell large quantities of venom, presumably collected during the Soviet era. I know of no market. Thus, it is not surprising that Russians too are involved in venom research, and were the

main presenters in Durban on the subject.

Prof. Igor V. Krivopalov-Moscvin and colleagues at the International Medical Center of Alternative and Traditional Medicine 454000, Russia, Chelyabinsk, Svoboda str., 86 reported on progress in treating multiple sclerosis (MS). They worked out a treatment based on bee venom "fractions," which influences the neurological status, holds up demyelination, stabilizes the index of red blood, decreases neutrophilic and monocyte leukocytosis and plasmatic reactions of lymph tissue. They say the composition of bee venom fractions consists of a lot of active peptides, amino acids, microelements, which "improve metabolic immune process by regulation of vegetal nerve system," normalize vascular tonus, and increase resistance of an organism in general. At the same time there are a lot of amino acids that stabilize and improve the work of nervous system, causing the so-called "nerve-growth factor" that allows remyelination. The treatment also includes propolis and apilac, which have a positive influence on spastic syndrome, decrease convulsion readiness, and improve coordination. They conclude that over a period of three years 1,500 patients have been "cured." Unfortunately, like many proponents of apitherapy, they could not resist hyperbole, proclaiming, "It is indisputable fact of effective influence of apitoxines on this disease that is why beekeepers practically do not suffer with MS!"

Other presentations included subjects liked using bee venom in treating neuralgia, infections of *Berpes zoster* in older people, and even drug (opium) addiction. Propolis was studied with reference to wound treatments and cholesterol reduction in rats, and honey used for treating a range of disorders, including the use of stingless bee (*Melipona favosa favosa*) honey for cataracts (in rats). Perhaps the most unusual topics were rearing honey bees as a source of chitosan, a substance sought after for human use in weight control, and employing extract of honey bee larvae and pupae for antitumor activity in rats.

### Genetically Modified Crops

The Standing Commission on Pollination and Bee Flora featured several presentations on genetically modified crops and their relationship to honey bees. This is a hot topic and one that will continue to concern, perhaps mystify, beekeepers and the general public in the future. This does not mean, however, that lay persons should remain ignorant of the potentials and consequences of this important technology.

The stage was set by Prof. Ingrid H. Williams, IACR - Rothamsted, Plant and Invertebrate Ecology Division, Harpenden, Herts, AL5 2JQ, United Kingdom. Farmers are currently growing about 60 million hectares of genetically-modified (GM) crops worldwide, she said. The major ones are maize, oilseed rape, potato, tomato, soybean, cotton, tobacco and sugar beet. These crops are pollinated by wind, or where pollinated by insects, are largely self-pollinated by them since they are self-fertile. However, recent advances in biotechnology will allow the development, within the next decade, of a wider range of GM crops with enhanced resistance to disease, pests and herbicides, improved nutritive quality, incorporation of male sterility or greater tolerance of adverse growing conditions. That's the upside.

The downside is that these newer crops will include many insect-pollinated, self-incompatible species, such as the forage legumes, which are pollinated by

Continued on Next Page

bees. According to Dr. Williams, an environmental concern about insect-pollinated GM crops is the possible spread of genes from them by their insect pollinators, primarily bees, into non-GM crops or into wild relatives, via pollen. Consequences may include, for example, spread of herbicide tolerance, with resulting progeny becoming weeds or invading non-agricultural habitats. This could result in loss of identity or even extinction of wild plants.

It is fortunate that this process has many requirements Dr. Williams says. These include:

1. The pollen must contain the transgene.
2. The donor and recipient plants must be within range of each other, flower at the same time and be sexually compatible.
3. The transgene must be delivered to the stigma in a viable pollen grain by the bee.
4. The pollen must then fertilize an ovule to produce a viable seed.
5. The seed must germinate and establish a hybrid plant which can self- or cross-pollinate or reproduce by vegetative means.

**F**inally, only if the transferred gene confers some advantage on the hybrid plant and its transgenic progeny, increasing survival fitness, is there potential for its further spread. Clearly, although possible, there are many possible ways the outcomes many fear will happen with genetically modified plants can and will be short-circuited. Two major areas of interest within this context are bee foraging behavior and gene flow. The former consists of variables associated with forage area, flight range, foraging route, and efficiency and spatial distribution of transported pollen. For the latter, they include compatibility, diversity of pollen carried, efficiency of different bees (Bumblebees vs honey bees), pollen carryover, dispersal and spatial dynamics. The ideal objective, Dr. Williams concluded, is to limit gene flow. This might be done by designing crop plants that produce little or no pollen (or pollen that is incompatible), by separating pollen donor and recipient plants spatially or temporally, or finally by using a trap crop to absorb pollen carryover from the transgenic release.

The only way to effectively look at this system, according to Dr. Williams, is to find a model that mimics it. The Rothamsted Experimental Station has in fact done this using white clover, which has many of the characteristics of plants that are candidates to be genetically modified. A paper on the World Wide Web provides more detailed information //216.239.51.100/search?q=cache:DrYaCPuECu4C:www.iger.bbsrc.ac.uk/igdev/IGER\_Innovations/In99/ch3.pdf+rothamsted+white+clover&hl=en&ie=UTF8.

A major concern of beekeepers is how nectar and/or pollen from genetically modified crops will affect bees. Ground breaking work in this area was done by Dr. Minh-Hà Pham-Delegue of INRA, the French equivalent of the U.S.D.A. as early as 1997. The results of those studies indicated significant differences in quantity of nectar found in various transgenic varieties of oilseed rape (colza). Comparing volatile emissions between transgenic colza and control plants also indi-

cated that genetic transformation can modify existent plant odors. In other studies, analysis of larval intestinal proteins of adult worker bees fed protease inhibitor (PI) did not show a higher-than-normal level. In addition, no apparent toxicity was found when measuring bee mortality in the same way it is done for pesticides. <http://apis.ifas.ufl.edu/apis97/apapr97.htm#4>.

E. Tregidga and J. Todd of Horticulture and Food Research Institute of New Zealand Ltd, Mt Albert Research Centre, Private Bag 92169, Auckland, New Zealand reported in Durban observations concerning genetically modified crops and their side effects on both honey bees and bumblebees. An important issue according to the authors is whether a gene will be "expressed." (in laymen's terms—do its thing). If expressed in the stems and leaves and not in the flowers (pollen) or nectar secretion, it would have no potential effect on foraging bees. The authors conclude: "Unfortunately there is a surprising lack of information on gene expression levels in the pollen of transgenic plants. Usually, only leaf expression levels are reported because these are the plant parts eaten by the pest insects. The available data from pollen studies suggest that expression levels in leaves and pollen may not always match and that one cannot yet make generalisations about expression levels in plant tissues. In the absence of more specific information, our approach with bee experiments has been to test a range of concentration levels for each gene product and to attempt to define the effects on the bees in relation to dose received."

The authors fed purified preparations of the following protease inhibitors (PI): aprotinin (also known as bovine pancreatic trypsin inhibitor or BPTI), Kunitz soybean trypsin inhibitor (SBTI) and two inhibitors from potato (POT-1 and POT-2). In addition, they fed purified preparations of a cleaved (activated) Bt toxin. Cry1Ba, and the BBP, avidin, were also used in some experiments. Major effects were reduction in bee longevity, correlating to higher concentrations of materials fed. In conclusion, the authors state they have "shown that the impacts of transgenic plants on bees will depend on the nature of the gene introduced into the plant and on the bee's level of exposure to its protein product." And "that lab and field tests using purified gene products can be a useful preliminary to studies with transgenic plants."

Another way honey bees can be affected is at the colony level through population growth. Thus the paper by Henrik F. Brødsgaard and colleagues, Research Group Entomology, Danish Institute of Agricultural Sciences Research Centre, Flakkebjerg, DK-4200 Slagelse, Denmark. This study looked at the effects of feeding PI to workers, which were reflected in larval development. According to the authors, "Expression levels of transgenes in GM plants vary according to plant tissue and species. We chose 0.1% and 1.0% SBTI (Kunitz Soybean Trypsin Inhibitor) as realistic low and high expression levels, respectively, and investigated the juvenile development, mortality, and adult body mass with larval diets containing 0.1% or 1.0% (w:w) SBTI of total protein. A control group was fed with a larval diet containing 1.0% (w:w) Bovine Serum Albumin (BSA). We did not include the fact that nectar is dehydrated when it is converted into honey in the bee hive and that this process increases the protein content in the honey that is fed to the larvae in situ compared to the protein content in secreted nectar."

Continued on Page 52

BEE CULTURE

# Queens, Queens, Queens . . .

## Miscellaneous comments and procedures

James E. Tew

### **Rarely around when you want them**

On your behalf, and that of others, I have purchased about 30 queens from different suppliers – different strains – different colors – SMRs<sup>1</sup> – hygienic queens – brand names – no names – I tried to buy some of all. For the past few days, these queens have been arriving. We were as ready as we could be, but the weather must be combined with the splits and life becomes (more) hectic. Anytime I have packages or queens confined, I am nervous.

In future articles, I will refer to the success/failure of the various queens, but my comments are only observational and are not intended to be considered a scientific observation<sup>2</sup>

### **Ordering queens**

Some comments on ordering queens are appropriate at this point. We ordered by phone and by email. Frequently, when using the phone, we got an answering machine – which was okay, but we rarely got a call back saying that our message had been received. So we would ponder, “Did they get the message or not? Will we get the queens?” But all producers filled all our orders in timely fashion. Generally, when using email, we had more communications with producers.

### **Dead queens**

A couple of the queens came to us dead. Not too much to do with them except put them in alcohol for some possible future discussion. For several reasons, it is unfortunately common for queens to die in transit. Depending on the number shipped and the manner of insuring, the queens will probably be replaced by the producer. You have little recourse except to contact the producer with the news. Assuredly, they will have heard this message before, but all producers want good customer relations and will usually do whatever it takes to get you a queen in good shape.

Queens dying during the introduction phase are in a different category. Was this your fault, the fault of the producer, or the residual fault of the postal system? Probably no one will ever know, but, in most cases, another queen will be shipped. I have heard producers complain about multiple shipments of queens to a beekeeper who seems to be having more than his/her share of bad luck. I don't know where the line is, but I suppose at some point, after some number of queens have

been shipped, the producer and the customer must have a falling out. Fortunately, I have never heard of this happening, but there must be stories there.

### **When the queens arrive**

There really isn't much for you to do, but first be sure she is alive. If so, good. Secondly, place one or two drops of water on the cage wire. Normally, worker bees will drink it right down. If they seem particularly thirsty, do it again. Go through this procedure every day that the cage is not in a hive. Be sure to use clean water, applied with a clean dropper, finger or whatever.

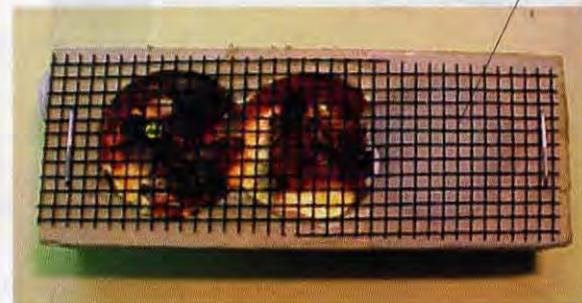
### **Workers within the cage**

Don't fret too much over the workers in the cage. They will normally begin to die well before the queen. Later, when introducing, don't bother trying to release them before releasing the queen. I know that some of you practice that procedure, but the chance of the queen flying away is too great for a novice and not worth trying to coax the workers out. Some will debate this, but my experience is the extra stress on the beekeeper isn't worth the effort.

### **What to do with the queens until they can be introduced**

They can lay around your house for a surprisingly long time – if they have access to food and if you do the occasional drop of water routine. However, there are no guarantees. The quicker you can get the cage in a hive, so much the better. The quicker you can get the queen out of the cage – even better. But what if you don't need the queens right away or what if the weather is bad and you must hold the queens for a while? Temporarily putting them in a hive, a procedure sometimes called “banking queens,” is the common way to go. Get them as near the brood nest as possible. *Don't* put them on top of honey super frames.

**Candy Fondant**



A queen, marked in yellow, in a common 3-hole Benton wooden cage.

<sup>1</sup> SMR = “Suppressed Mite Reproduction”

<sup>2</sup> For archived queen management articles, see:

Tew, James E. <http://bee.airoot.com/beeculture/months/96aug/96aug3.htm>

Tew, James E. <http://bee.airoot.com/beeculture/months/97feb/97feb5.htm>

Latshaw, Joe <http://bee.airoot.com/beeculture/months/02mar/02mar3.htm>

**Banking queens**

Whether you are holding one queen or 50, the procedure is basically the same. While confined to wire-covered cages, caged queens are temporarily put in a functional colony where free-roaming worker bees will care for the caged queens. For large queen banks, colonies are frequently used that are queenless, but strong in young bees and capped brood. Special frames are used to hold the cages in rows. When banking large numbers of queens, generally no attendants are included in the cages.

When banking only a few queens – say two or three – simply put the cages, with the wire covering down, on top of the frames over the brood nest. Invert the inner cover and close the colony up. Obviously, queens were not meant to be confined to cages. Expect some number of queen deaths – some much sooner than others. I don't know of any numbers in the literature. Some queens die quickly while others live for months confined to a cage.

**Queen cages and their use when introducing queens**

**Wooden queen cages**

For many years, the common Benton cage was the queen cage of choice and is still the frequent cage. However, a plastic cage is now commonly available but is used in the same manner as the wooden cage.

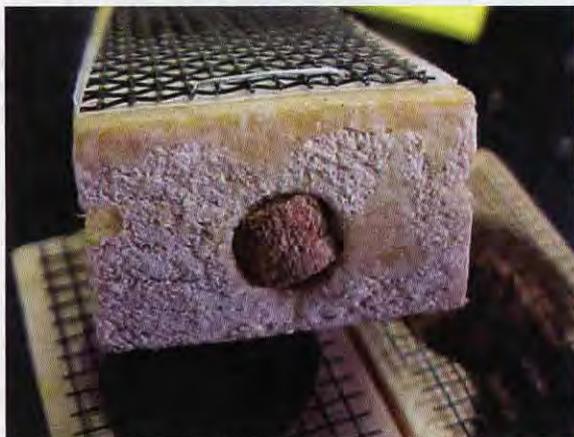
The bees confined to the cage have access to the candy plug while the candy is excluded from external bees by a cork plug shown in photo. This plug should be removed before beginning the releasing process.

The cage should be installed with the candy plug up with the screen wire facing out toward hive bees. See the diagram.

In order to position the cage as shown in the diagram, you will need to temporarily remove one frame from the hive.

**Plastic cages**

The plastic cage has a completely different look, but functions in the same way. It is smaller and will not require removing a frame. Both cages may require innovative use of a thumbtack and a garbage bag tie strap when suspending between frames. Just make sure the candy end is up, and the hive bees have access to the queen through the wide side of the cage.



*The cork covering the candy plug, from the outside.*

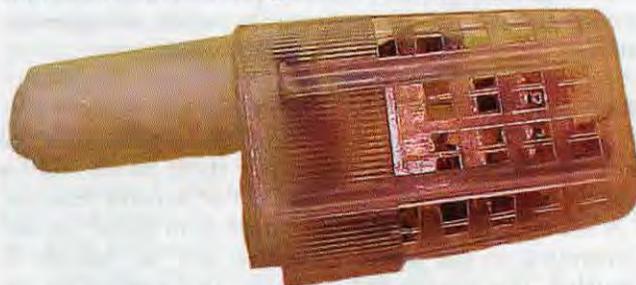
**Improvised 8-mesh wire cages**

An excellent introduction cage can be improvised from 8-mesh hardware cloth. The cage should measure about 3" square and be about 3/4" deep. A disadvantage is that the queen must be handled in order to get her underneath this cage. The cage, confining the queen – without any other workers – is pressed into the comb. The comb can have some honey but should otherwise be empty and should be within the brood nest area. Approximately four days later, the cage can be removed if workers are not clinging to it aggressively. A significant advantage to this procedure is that the queen can begin to immediately lay eggs.

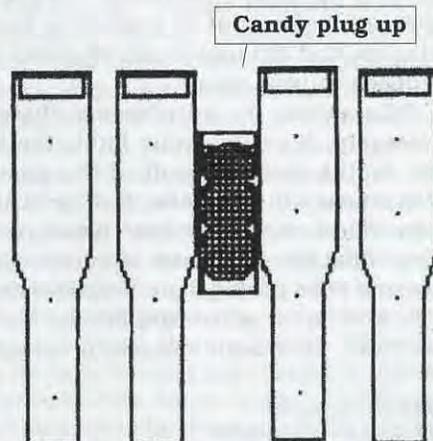
**Is she out?**

In both the wood and plastic cages, exposing the candy plug to external bees will entice them to eat the candy plug thereby slowly releasing the new queen. This process should last, at least, a couple of days. In the case of all types of cages, the bees will react to the queen in the same manner they will react to the cage. If they are aggressively clinging to the cage, they will do that to the queen should you release her at that point. If however, the bees are gentle on the cage and move away as you lightly brush them, it is safe to release the queen.

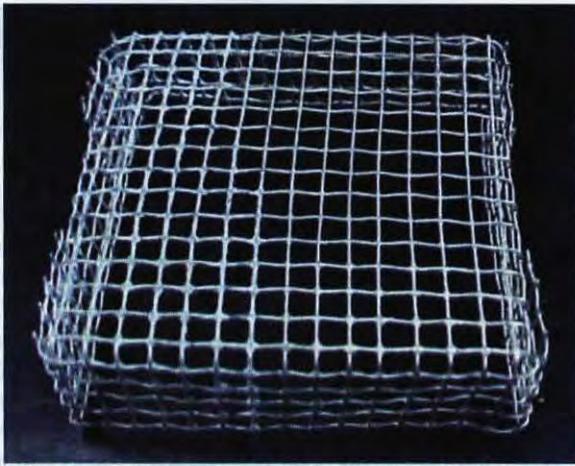
Be careful when releasing a queen. Frequently, she seems reticent about leaving the cage. You would think she would run from the cage singing and dancing, but all too often, she is timid and stays in the cage. In the case of wood cages, using your pocket knife, pry one of the staples from the wire and pull it back. Lay the opened cage on the comb and entice the queen to leave. The plastic cage simply pops open when the feeder tube is removed. Use light smoke and be gentle. If you



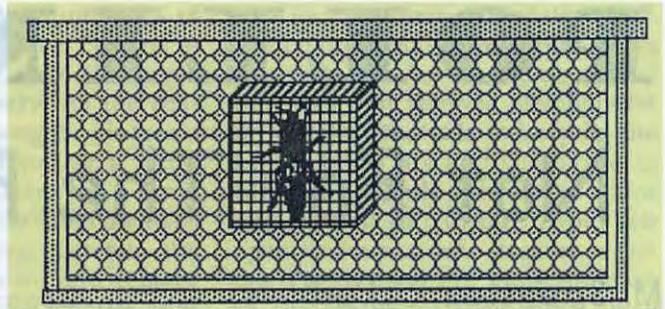
*A common plastic cage. The extension contains candy.*



*Diagram showing placement of queen cage. (Diagram from Glenn Apiaries.)*



An improvised wire cage made from 8-mesh hardware cloth.



A diagram of the queen within the cage on brood comb. (Graphic from Glenn Apiaries)

**But for right now**

But for now, what I have are queens on my desk, queens in my lab, queens in the mail, and queens in some of my splits. It's an exciting time requiring specialized procedures and details. It's an enjoyable aspect of beekeeping. **EC**

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

excite the queen, there is a chance she will fly away. Without getting too far off the subject, if she does fly away, move away from the open colony, making sure to leave it open, about five minutes and hope that she finds her way back there. She frequently does.

**A story for another time**

In a story for another time, I will talk about making splits from parent hives. That is what we are doing with all the queens that we are installing. We will baby both the split and the new queen and try to build them up into winterable colonies the remainder of the summer.

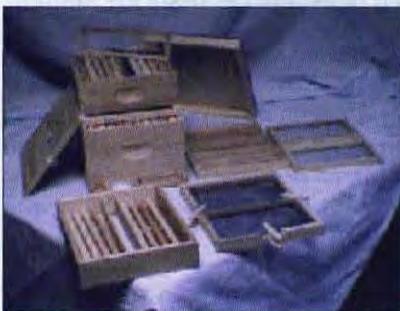
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# POLLINATION

## Not For The Faint Hearted!

M Spensley Rickert

Beekeeping to me has that Beauty and the Beast element about it, which makes it particularly intriguing as the years pass. Sure I enjoy the "gentle craft," and I practically reach a state of nirvana on those vibrant sunny days in some country setting tending to a few hives as the surrounding air is alive with the coming and going of my faithful troops. But there's another side, the **dark side**, when it's the middle of the night and you either have to drop off or pick up some pollination hive rentals and return home in time to get the kids off to school before your wife leaves for work. It's regarding this beastly adrenaline arena on which I'd like to pontificate.

Just to get off on some firm footing here – don't be fooled – pollinating is not for the faint hearted and you don't have to take my word for it, just ask a few beekeepers you know and odds are you'll get some responses like, "Oh yeah, I used to dabble in that!," or "In my younger days " However, if you have even a hint of the rock'um sock'um cowboy in you, then perhaps it is something you might like to ponder. I hope I'm not coming off as being rather brash, but that's how I feel out there at night, like it's me against the world! Not in a bad way mind you, it just seems incongruous to some folks, that a rational individual would willingly choose to transport rather heavy objects, full of what amounts to large numbers of highly agitated stinging creatures to some remote location, only to turn around at a latter date and reverse the procedure. Well, perhaps rightly so, but did I mention the rewards? First, there's the financial (by no way should this be over estimated). I merely mention it first being a capitalist through and through. Secondly, there's that category which is slightly more difficult to quantify,

which deals with forcing yourself to be outside, where you might not be otherwise, and forcing you to get your act together, your beekeeping act that is. It's hard to put a value on these rather intangible things, but if you're a beekeeper, I think you get my gleaning.

For me it all started several years ago, when I was bemoaning all the work that went into getting a pound of honey into a jar and subsequently getting someone's money in exchange for said jar. I naively thought wouldn't it be nice to get \$35 or \$40 per hive maybe once or twice a season just to lend my loyal workforce to some farmer with the noble purpose of helping to produce bumper crops to feed the world's ever expanding population. This required me to do a little telemarketing (in an era before the term conjured up notions of lynching, general nausea and violence). My phone work got me in touch with the patriarch of a local fruit growing enterprise – who after administering some form of an inquisition into my life's history relating to beekeeping – was willing to let me test my wares on a limited basis in a block of mixed semi-dwarf apples. The gruffness of the man's attitude made me a little uneasy, but in hindsight I realize he was just sizing my bees and me up. It has been several years since that first foray, and although the patriarch passed away a few years ago I still provide pollination services for that enterprise. I have also developed some additional business relationships/friendships with other growers in the area, who appreciate a dependable beekeeper, who has his bees ready to go the same time the blossoms are.

Well if you're still with me, we need to get down to the nuts and bolts of the matter. First and foremost you have to have good strong hives that have a sufficient field

force to do what it is they were hired for and the number of hives that you have agreed to provide. This varies from crop to crop and some pollination contracts specify a certain number of frames of brood, which are used as a benchmark for the strength of a hive. Remember, it is better to start small and see if this is really something you would like to stick with, but equally importantly, so that you are able to deliver what you promised. I don't use pollination contracts, I'm still a handshake guy, but that doesn't mean that I'm not conscious of all of the elements that are covered in a good contract and why they are there. I have the good fortune of having developed a good rapport with a number of "local" growers and they compensate me, no questions asked, based on my performance. That is not to say that the occasional bear has not come into play, or that there may have been questionable pesticide applications in someone else's fields nearby over the years, but after all this is not a perfect world we live in. That said, I would strongly advise anyone contemplating pollination work to get his or her hands on a good contract and look it over. All the points specified are there for good reason, those are the issues which have led to real life problems in the past.

Next, your equipment has to be in good repair. A lot of this work is done at night because the bees are home for the night and they are less likely to wage full-scale defensive warfare when they can't see who or what it is they are after. But that doesn't always have to be. If you screen hives early in the morning before they start to fly and can get them to where they are going before they start to overheat then you can work in the good old light of day. This is especially nice if you are unloading in places you are not intimately familiar with. I screen the

entrances of all the hives I move using wooden frames with screens over them which are screwed over the hive entrances using a cordless drill. They can be put on or taken off in a matter of seconds. I also use a ratchet strap on each hive to hold them tightly together and to aid in picking up and moving hives. On all occasions however, you want to avoid "leakers" as I call them. Which is any hive where bees are escaping during transport. Man's best friend (other than the dog) is a big roll of duct tape and can usually seal off any unwanted escape routes, but certainly won't overcome the deficiencies of equipment in poor condition. It just makes the whole experience more enjoyable and you lose fewer bees along the way.

Transporting hives usually boils down to using whatever equipment you have, because purchasing specialty equipment solely for this purpose is generally cost prohibitive. I use my one-ton van, with or without a trailer depending on the quantity of hives to be moved and the time of the season. The van itself

will do when moving quantities of five to 10 hives in the Spring to smaller growers, before the hives have gotten too heavy. As the season and the hive weights progress, I'm usually forced to use a hand truck and roll the hives up a ramp onto a low level trailer (the type used by most landscapers). Later in the season I often remove and replace full honey supers with empties once or twice, prior to moving the bees into new crops. I also have the luxury of having a few small trailers, which I have picked up over the years - when the price was right - on which I leave hives year round and just pull them to their various pollination locations, unhook them and return to get them at the appropriate time. These pay for themselves rather quickly, when your time and physical exertion are factored in. This is especially true when you are working with crops like cucumbers, where they might stay only a short time before being moved to the next field following the planting sequence. When placing hives in a field or orchard it is always a good

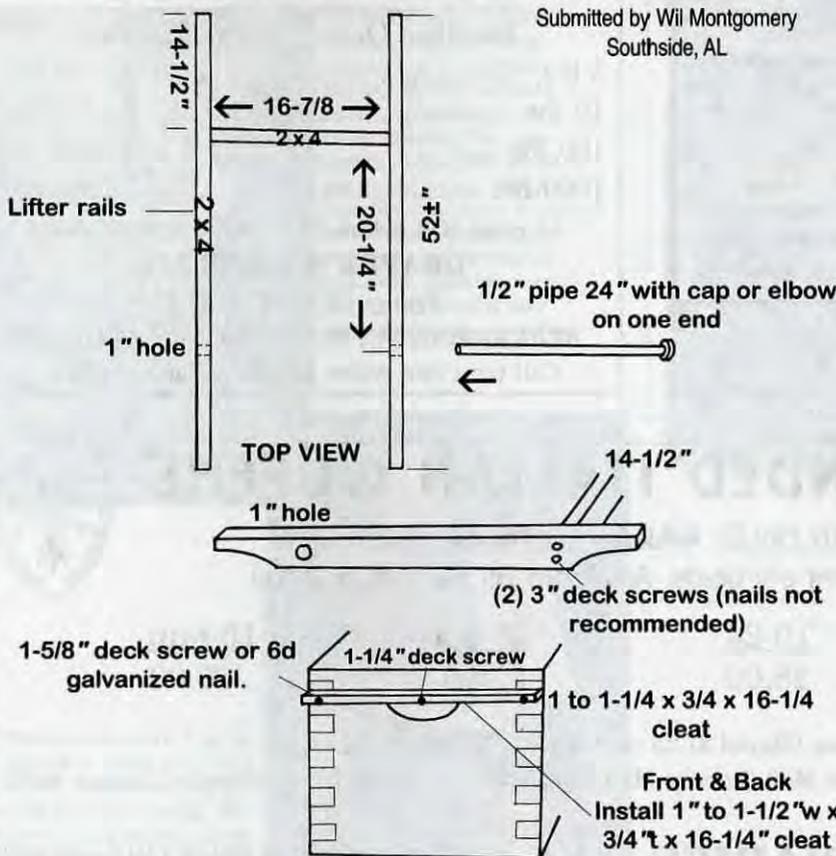
idea to place them on pallets, which can be provided by the farmer or are generally free for the taking at any business that receives merchandise on pallets. This aids in keeping the hive bottoms dry and allows you to tilt them slightly forward to allow any rainfall to run out. Avoid low spots and areas near streams or rivers. Floodwaters are indiscriminant in the materials they wash away with them and beehives are not immune.

Last but not least, "always" bring along anything you have ever needed in your beekeeping experience, because sooner or later you will need it and often home is not right around the corner and time is never on your side. My survival list goes something like this: two smokers (you never know when one will be left behind, when you are visiting multiple sites in the dark), plenty of fuel, cordless drill with an extra "charged" battery and extra screw tips, a regular screw driver in case old faithful kicks the can, cell phone, tool box with what ever yours might contain, jumper cables, tank of air, fix-a-flat, two flashlights and spare batteries, I also love using a head lamp which frees your hands up (available in most camping stores), hand truck, hive screens, and I also have a five gallon bucket with odds and ends: hammer, hive staples, sting kit, matches, lighter, duct tape, nails, extra ratchet straps, hive tools, water jug. Lastly, always bring along a complete extra hive including frames, you never know when you'll need one piece or another or when you might stumble across a swarm (yours or someone else's). It might sound like over-kill to a lot of you, but remember I generally do this work alone, though I wouldn't recommend it, and nothing is more disheartening or a waste of time than driving 20 miles to load some bees and forgetting the screens or a smoker or something else rather essential. It seems fitting that one of those old clichés would help bring this to a close like, better safe than sorry, or was it early to bed, early to rise makes every beekeeper healthy, wealthy, and wise - well anyway you get my drift. **EE**

*M. Spensley Rickert keeps bees and pollinates in Hatfield, MA.*

## Back Saving Two Man Hive Lifter

Submitted by Wil Montgomery  
Southside, AL



Remove pipe from lifter. Slide lifter rails from rear to front and slip pipe through hole. When you and a helper lift the hive the rear 2 x 4 and front pipe will lock in under the cleats.

# Ed & Dee Lusby Make SMALL Cell Foundation

Allen Dick

Within minutes of our arrival at the gate to Lusby's lot in Tucson, AZ, Joe and I were put to work making foundation with Dee. I found this a bit ironic, because I have used very little wax foundation since I discovered plastic foundation years ago, and like many others, have come to consider wax foundation to be a bit archaic. The work involved in putting wax into frames and its fragility if bees do not draw it into comb immediately limits its appeal to me, but we were there to learn, and learn we did.

I discovered that the sheets they make are very different from the commercial foundation I have used over the years. Lusby's use the darkest wax they have and the sheets are thick and tough. The sheets are also made a bit short so that they do not quite reach the bottom bar, and hang in the frame, yet the wax does not buckle, sag or shatter. No vertical wiring is used.

Dee and Ed have chosen to make their own foundation because they want combs with cells that at just under 4.9 mm in overall diameter, and because they want to be sure the wax they use contains not even the slightest trace of currently popular mite treatments. Although the foundation making described here is simple and inexpensive, plastic foundation would be much easier for many of us to use than wax. I have just learned that Dee has recently made arrangements to have plastic sheets of 4.9 comb foundation made in Korea. Prototype sheets are now in Dee's hands for evaluation, and production should begin soon, so those wishing to try this smaller cell size should soon be able to buy plastic 4.9 comb foundation in the U.S.



*Before beginning work for the day, Dee sands all surfaces of the wooden dipping blank to ensure water will adhere to it. When dipping, the wax sheets peel off the easily if the wood is wet. Wax for foundation making is melted in the dipping tank (left foreground). The tank is insulated, water jacketed, electrically heated, and thermostatically controlled.*



*Dee dips the blank completely into the molten wax twice, once with each end down, to ensure an even, thick coating. She waits a moment between dips to allow the wax to set a bit. The wax for dipping is held just above the melting point, so it makes a thick coat and cools quickly.*



*Joe examines the blank as he prepares to dip it into the water tank. Water ensures the wax will peel off cleanly, and the blank is dipped into water before each new sheet is made.*



*The wax sets quickly and she then trims the wax off ends and sides immediately.*



While still soft, two blank sheets of wax are peeled off the damp board - one from the front and one from the back —and stacked awaiting milling. Scraps go back into the melting tank.

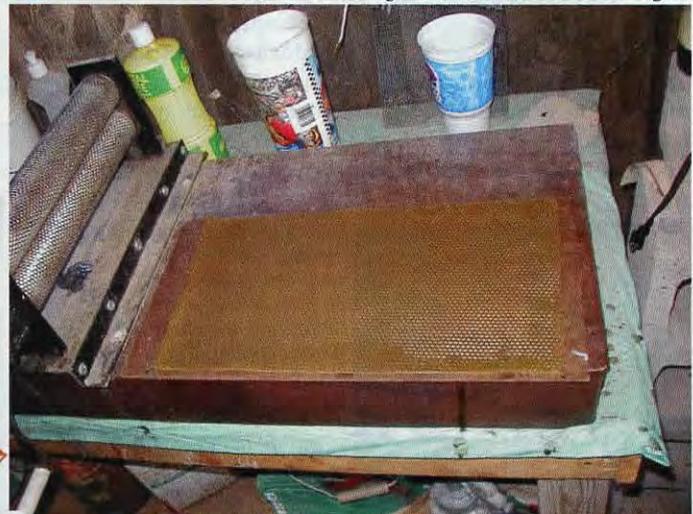


The still-blank wax sheet is wetted with water and a biodegradable dish detergent to prevent sticking and sandwiched between two layers of plastic garbage bag in preparation for a trip through the mill.



The wax, enclosed in the thin plastic is then rolled through the mill. These hand-cranked rollers are specially made by Tom Industries of Yuma to produce a cell that measures just under 4.9 mm. Joe and I later met Tom on our way west, and saw his shop. The newspaper pieces shown are used to separate the fresh sheets of foundation to prevent their sticking together.

Here is a new sheet of foundation. It is thick and tough and well detailed. These sheets have no cell walls embossed in them, and have just the bases formed. Most commercial foundation has the beginning of cell walls to make things easy for the bees. Dee says that, when using this style, the bees thin the cell bases and use that wax for cell walls, and seem to like it just as well as the other style.



After the sheet is milled, Dee trims it to size using a common knife and a template. The dimensions are not critical, since it will be attached in the frame at the top bar, but allowed to hang just above the bottom bar. The sheets are quite rigid and this top attachment and five hand-crimped cross wires hold the combs very nicely on center.



Ed holds a typical drawn frame of 4.9. Obviously his bees like it, and do well on it. We saw many good frames during our visit. We saw only a few on which the bees had done less than a perfect job of drawing the wax. This brood pattern was typical of Lusby's bees, and we saw almost no mites.

# Meriwether Lewis & His Beeswax Boat



## So Where Did The Beeswax Come From?

Tom Theobald

Candlemaking is a quiet time in the seasonal life of a beekeeper. As the snow sifts slowly down through the bare cottonwood limbs outside the Honey House window and the candles slowly grow with each successive dip, there's a lot of time to think. Everything in moderation though. I can only occupy myself with my own thoughts for so long.

I have both a television and a radio in the Honey House and these help to provide a voice in the room for those long Winter hours I spend alone. But there's another pleasure I've come to enjoy over the years – recorded books.

In my listening, as in my reading, I lean heavily toward non-fiction, mostly biographies and history. It's sort of like continuing education in my mentally idle hours. Just before Christmas I revisited an old favorite – the transcontinental journey of Captains Meriwether Lewis and William Clark and their Corp of Discovery, which occupied the years 1803 to 1806. The recorded version of their journey was Stephen Ambrose's *Undaunted Courage*.

Somewhere in the dark recesses of my library is a well-worn paperback copy of their Journals that I devoured in the 60s. On an extended road trip in the early 70s, Barbara and I retraced much of their western route, as far as Cape Disappointment on the Washington side and Fort Clatsop on the Oregon coast at the mouth of the Columbia River. In later years I wandered the valleys of the Snake, Clearwater, Big Hole, Salmon, Bitteroot, Beaverhead, Madison and Jefferson

Rivers in Montana and Idaho on varied adventures and came to have an intimate feel for the rivers they followed and the land they passed over.

One of the first major obstacles encountered by Lewis and Clark was the falls of the Missouri River, where the city of Great Falls, Montana is today. Lewis designed and had built at Harper's Ferry in the Summer of 1803 a wrought iron frame for a boat he planned to employ when the party reached the headwaters of the Missouri River and had crossed the continental divide to a river flowing toward the Pacific. But it was decided that this boat would be put into service once the party had portaged beyond the falls.

Both Lewis and Clark were cautious, conservative, meticulous planners, as evidenced by an inventory of their supplies at the end of the expedition. While they ran out of things which might be considered luxuries, such as tobacco and whiskey, they ran low but never out of essentials. They had enough of some items at the end, powder, lead and rifles for example, that the expedition could have been repeated. One ingenious item attributed to Lewis was the packaging of the gun powder. He had lead canisters made which would, when melted down, yield just enough balls for the gun powder which the canisters contained. He wasn't quite so successful with his iron-frame boat.

Thirty-six feet long, four and one half feet wide, 26 inches deep and light enough to be carried by five men when empty. The boat was one

of Lewis' pet projects, an idea he and President Jefferson had conjured up. He expected it to be capable of carrying up to 8,000 pounds of the expedition's supplies above the portage – enough cargo to replace two pirogues (dugout canoes) – and be easily transported when empty in the event that future portages were required.

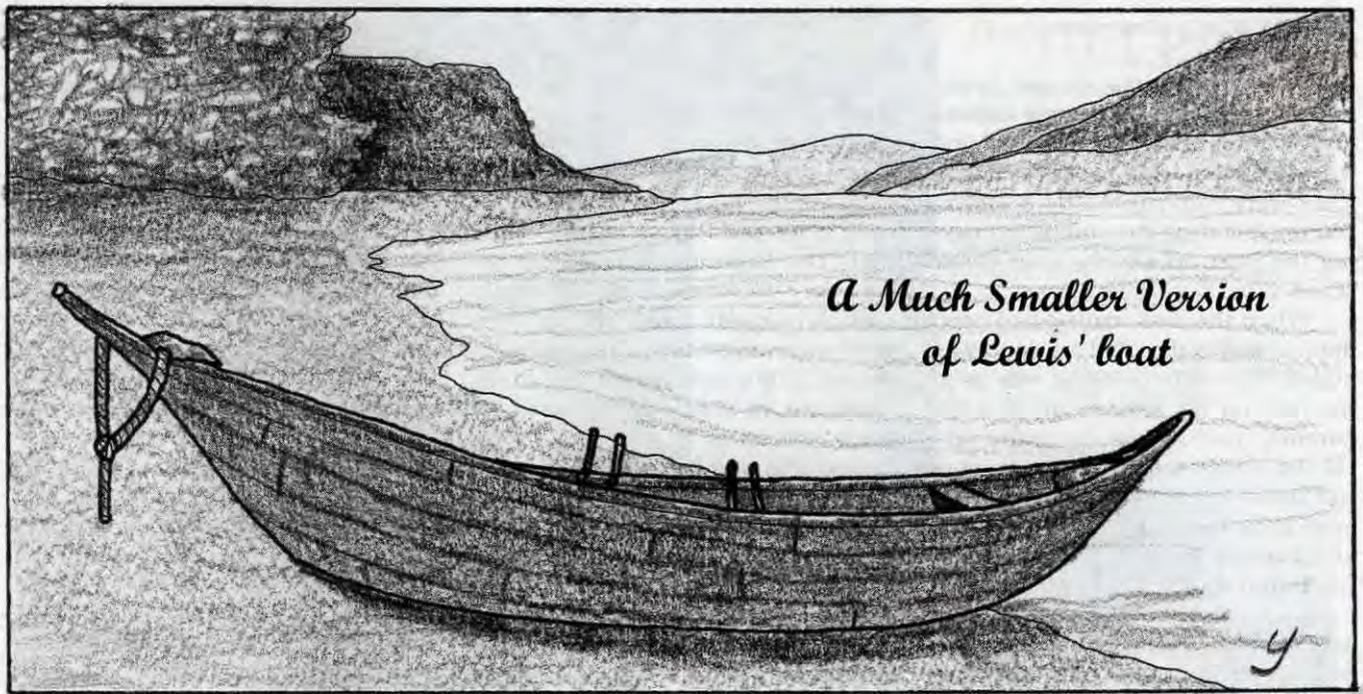
Despite Lewis' careful planning however, problems began to appear with the boat almost as soon as it was unpacked.

The first, a relatively minor one it would turn out, was the matter of the covering. Lewis had planned to skin the boat with animal hides. He preferred elk hides because he believed they would be stronger and more durable, but despite the abundance of buffalo and deer around the falls, elk were scarce. Ultimately the boat was covered with the hides of 28 elk and four buffalo.

Of greater concern was the absence of pine trees, pitch pines from which Lewis had expected to produce tar with which to seal the boat. He experimented with tallow and charcoal, a combination that served as a sort of "Bondo" on the canoes. In desperation Lewis finally resorted to a mixture of tallow, charcoal and beeswax, the only materials he had at hand which held any promise of sealing the boat.

It was the mention of beeswax on the tape which caught my attention, naturally because I am a beekeeper, and because I was something of a student of the western migration of honey bees.

Where did the beeswax come



*A Much Smaller Version  
of Lewis' boat*

from I wondered? While historical accounts of the western advance of honey bees are sketchy, they are nevertheless accurate, and my understanding was that the Great Falls of the Missouri would have been more than a thousand miles beyond that advance in the Summer of 1805. If Lewis had found bees (and thus beeswax) anywhere near the Great Falls it would be significant new historical information.

From their first landfall on the east coast in the early 1600s, bees moved westward, sometimes as far as 100 miles in advance of a settlement. The first swarm of bees had crossed the Mississippi River in the Summer of 1797 at St. Louis, and English naturalist John Bradbury, who accompanied the Hunt Expedition up the Missouri in 1811, noted that they could be found 600 miles up the river at that time (which would have put them in the vicinity of today's Sioux Falls, South Dakota). By these accounts, in the Summer of 1804 honey bees would likely have advanced no further than today's Kansas City unless, of course, Lewis had found bees at the falls, which would have put them hundreds of miles beyond any previous accounts.

So it was off to see if I could solve this tantalizing little mystery.

As it turned out, as they commenced their journey in 1804 the expedition did encounter bee trees from which they harvested honey,

but these were in the lower reaches of the Missouri. There was no mention of whether they may also have harvested the beeswax.

Records show that among other supplies, Lewis purchased a quantity of beeswax candles as well as candle molds in Philadelphia in the Summer of 1803 as he made preparations for the expedition, and in April of 1804, Clark purchased one bag of candle wick and two boxes of candles in St. Louis, most likely beeswax.

This all makes perfect sense since beeswax candles were portable, nearly indestructible and were the lighting technology of the time. They were the Coleman lanterns of their day.

These candles were intended primarily for the Captains as they wrote in their journals at day's end. The men most likely used tallow candles, inferior because they smoked, smelled and burned quickly, however they had the advantage that they could be made from materials readily available along the route (animal tallow).

Some unknown quantity of bulk beeswax was undoubtedly a part of Lewis and Clark's initial inventory as well, since beeswax was a utilitarian item with numerous applications. In fact, records show beeswax was used to seal the lids of the lead canisters which Lewis had designed to carry the expedition's supply of black powder, and the 1803 supply

list teases us with a record of the purchase of one bundle of "sealing wax," which most certainly would have been beeswax. There is no indication of how much a "bundle" might have been. Whether this supply was sufficient to waterproof a 36 foot boat is doubtful.

As the portage began, Clark took responsibility for the portage itself while Lewis devoted his energies to the preparation of his boat. On July 1, 1805, Lewis took over as cook for his boat crew of five men, who he assigned to the tasks of securing, preparing and sewing hides to cover the boat. He and a sixth member of the crew set to work rendering down 100 pounds of buffalo tallow.

Based on my experience making various beeswax concoctions, Lewis' buffalo tallow/charcoal/beeswax dressing would likely have required a minimum of 50 pounds of beeswax, perhaps double that amount. Again, where did it come from? Even if the expedition had harvested wax from a bee tree or two in the lower reaches of the Missouri the previous Summer, the wax yield would likely have fallen considerably short of this requirement.

By the 4<sup>th</sup> of July, 1805, a sufficient number of elk and buffalo had been killed for the boat to be skinned over, and it was then inverted on scaffolds over small fires to dry the hides. In two days the hides were cured and on the afternoon of July 7 the crew prepared to "pay" the

*Continued on Next Page*

craft. "Paying" was an old term, meaning to apply the buffalo tallow/charcoal/beeswax mixture to seal the seams and waterproof the hides. They were interrupted by a storm, but the following day completed paying the boat, which the men christened "The Experiment."

When the first coating had been applied and had cooled a second was added. The waterproofing was used not only on the seams, but was apparently used to coat the entire vessel, for Lewis observed in his journal that . . . "it gives her hull the appearance of being formed of one solid piece," - the first beeswax battleship on the upper Missouri.

Launch day was the 9<sup>th</sup> of July and Lewis was as nervous as an expectant father. The iron ribs had occupied cargo space which could have been taken by additional supplies, trade goods or even whiskey, a fact not lost on the men, as the last of their "ardent spirits" had been consumed on the 4<sup>th</sup> of July, with only a small reserve for medicinal purposes. Nearly two weeks and the energies of several men had been invested in The Experiment and departure from the falls had been delayed an additional four days waiting for the boat's completion.

" . . . she lay like a perfect cork on the water" a relieved Lewis entered in his journal after the boat was placed in the river. He ordered the men to put the oars in place and the expedition prepared to set off upriver, but fortunately high winds postponed their departure. By the time the winds had passed a chagrined Lewis discovered that his perfect cork was sinking like a perfect rock. He lamented the sharp-edged awls he had brought, which cut the hides rather than punching a circular hole, which caused the holes to stretch and elongate as the hides dried, making them even more difficult to seal. Worse, the buffalo tallow/charcoal/beeswax mixture hardened and peeled away in the cold water of the Missouri, and only then did Lewis realize that had he just singed the hides rather than shaving them, the stubble would probably have held the waterproofing in place, at least until they reached a region where pines and pine tar would have been available.

There is some suggestion that the iron-frame boat was a source of friction between the otherwise compatible Captains. In his journals Clark has little to say about the boat, and if pressed might have christened the craft with a more descriptive and less charitable name than The Experiment. Once its inadequacy was clear it was promptly cached (buried). Clark and a crew of 10 men moved 23 miles upstream before finding cottonwoods of sufficient size to construct dugouts to carry the cargo intended for The Experiment and five more days were lost in the construction of two additional dugouts, both three feet wide, one 25 feet long and the other 33 feet. The Experiment is never mentioned again by Lewis or Clark.

So where did the beeswax come from for this grand failure? My guess is that it came from whatever raw beeswax was being carried by the expedition, augmented by any which they may have harvested from bee trees on the lower Missouri, and finally, if that was insufficient, and it likely was, from the stock of beeswax candles. I think in his desperation to make the iron-frame boat work, Lewis may very well have resorted to melting down some portion of their beeswax candle supply, or perhaps used some portion of their higher grade beeswax which had been intended for candlemaking. This certainly would not have improved Clark's opinion of the endeavor.

In support of this theory are journal entries for early 1806, as the corp made preparations for the return trip. On January 13, 1806 Lewis records in his journal, "This evening we exhausted the last of our candles, but fortunately had taken the precaution to bring with us moulds and wick, by means of which and some elk's tallow in our possession we do not consider ourselves destitute of this necessary article . . ." He goes on to observe that ". . . the elk we have killed have a very small portion of tallow." No mention is made of beeswax, in all likelihood because they had none left.

This dilemma was eased somewhat by an occurrence which Lewis and Clark could never have foreseen, any more than they could have foreseen the loss of their supply of beeswax in an attempt to float the

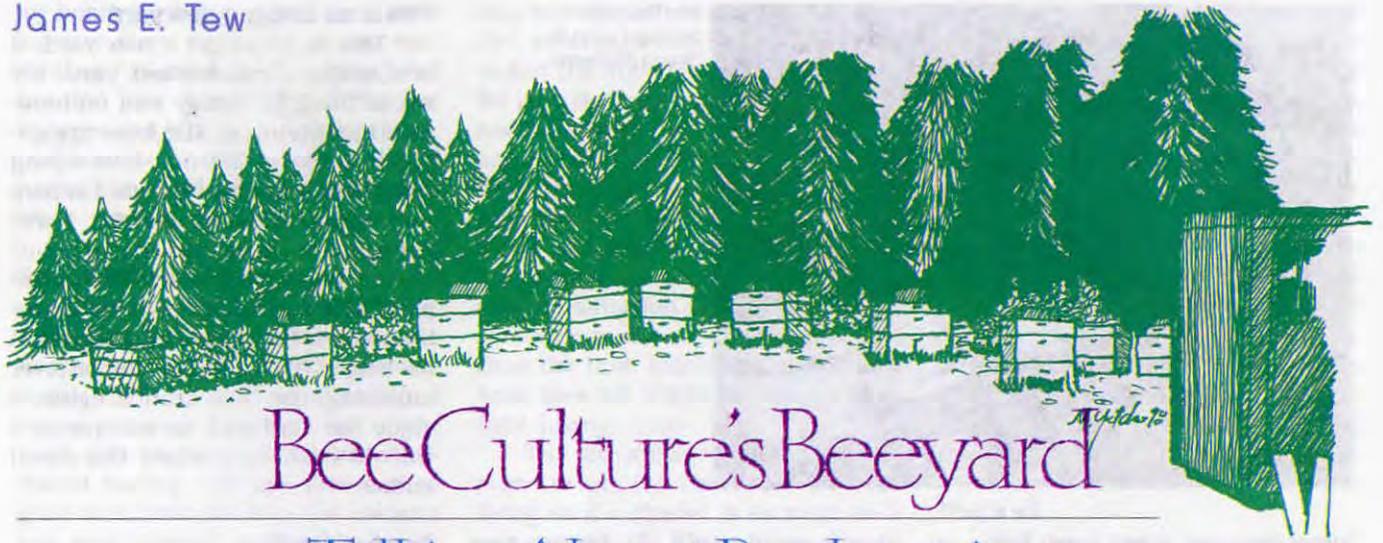
iron-frame boat. On March 8, 1806, Joseph Whitehouse, a member of the Corp who kept his own journal, recorded "Several of the natives came to the fort. They brought with them some small fish, beeswax and other items to trade with us."

Although it would be another 50 years before honey bees were introduced to the northwest by early settlers, the coastal Indians carried on a vigorous trade in beeswax, which was used by them for candlemaking and waterproofing. The source of this beeswax was the beaches at the base of Neahkahnle Mountain, about 40 miles down the coast from the mouth of the Columbia. As early as 1620 Spanish galleons carried on a regular trade between the Phillipines and settlements in Mexico and lower California. One of these ships was blown far off course by storms (variously reported to be 1620, 1707 or 1769) and went down off the Oregon coast with a cargo of beeswax (quite likely destined for liturgical candles for the Roman Catholic missions). The beaches were virtually mined by the Indians for blocks of beeswax and even today beeswax can still be found.

Subsequent to this trading with the Indians for beeswax the journals note that the men busied themselves making candles of elk tallow and beeswax, obviously an attempt to improve the burning characteristics of the tallow candles somewhat, as well as to stretch their limited supply of both beeswax and tallow, and this is further confirmation that when the candle supply was exhausted in January that there was no beeswax left in their supplies. Both Lewis and Clark would have been reminded of the incident of the iron-frame boat every evening on the return trip as they recorded their notes to the inferior light and unforgettable stench of tallow candles.

Now, almost 200 years later, what remains of Meriwether Lewis' beeswax boat may lie silently, somewhere beneath the Montana prairie: rusting ribs of iron, moldering scraps of buffalo hide and perhaps some traces of the indestructible beeswax from those precious beeswax candles. **BC**

*Tom Theobald makes candles, keeps bees and listens to books in his honey house in Niwot, CO.*



# Bee Culture's Beeyard

## Talking About Beekeeping

It has nothing to do with beekeeping – absolutely nothing – so why would I have comments on fishing when talking about beekeeping? Because beekeeping – like fishing – seems to be talked about more than actually done. I don't fish a lot and when I do, I am not very successful, but I just returned from a great one-day fishing trip. Already, I have talked about that one day for the past four days and I plan to keep on talking to anyone who will listen (numbers are dwindling).

Beekeeping is much the same. "Yes, I have 10 hives." "I must have had six swarms leave." "Are you having queen problems?" "I am considering getting some of the new plastic equipment." And on, and on it goes. My point? We talk and think about beekeeping, like fishing, much more than we actually work bees. That's okay. I find that I talk about my bees and my bee yard much more than I actually do anything in the yard. I suppose talking is easier than working.

### A Bee Culture Yard Review

For those of you late to this article series, approximately four

years ago, I bought a few packages and set up a yard and dutifully reported on all the problems, procedures and successes. It was, and continues to be, a mixed bee bag. From my original four colonies, I now have 14 – or about 10 more than I need. For beekeeping, that sounds about right. I only had one winter-kill this past Winter.

### Hive stands and yard layout

In earlier articles, I built hive stands<sup>1</sup>, mulched around the colonies, painted things nicely, and banded my new colonies. I even bought a garden bench so I could ponder, rather than work, bee colonies. The hive stands have worked fine. I was afraid that vermin would nest underneath them, but that has not happened. The garden bench is working out well, too.

### Queens

I have recommended, time and again<sup>2</sup>, to requeen about every two years. I suppose that you should know that I have never once requeened any colony in my yard (but I have the queens to do it right now.) I've thought about requeening and talked a lot about requeening, but it simply has not become a crisis so colony requeening still needs to be done. I am not particularly proud of this situation, but that is how it is.

### Swarms

For a couple of years, I sweated swarms<sup>3</sup>. During spring months, I checked the yard and hived the occasional swarm. I anguished over the lost ones. Now, I have become resolute. I would have liked to have gotten the ones that got away, but

*Not exactly a show yard, but good bees and good intentions.*



<sup>1</sup> Tew, James E. 1999. Bee Culture's Bee Yard. <http://bee.airoot.com/beeculture/months/99apr/99apr4.html> (Photos are in the original hard copy)

<sup>2</sup> Tew, James E. 1999. <http://bee.airoot.com/beeculture/months/99jul/99jul3.html>

<sup>3</sup> Tew, James E. 2001. Swarming, Beekeeping's Friendly Curse. <http://bee.airoot.com/beeculture/months/01may/01may4.html>

Tew, James E. 2002. Swarming Behavior – The Rest of the Story. May, 2002. Vol 30(5). Pp 39-41



*Mr. Gullledge's covered yard in South Alabama.*

### **This is no longer a new yard**

This is no longer a new yard. It is a mature, established yard. My initial flush of energy and enthusiasm has matured. The bees are going to survive. My non-beekeeping neighbors know that the yard is here and comment occasionally. I will continue to have ups/downs, but overall, this yard is a fact. I no longer panic if a swarm leaves. I no longer bum about the grass being too tall. I no longer hate skunks. Forget ever mulching the hive stands again. I enjoy the yard and its occupants. I will do real work when the mood strikes – or not.

since they are gone, I will focus on the bees that I still have. Honestly, I didn't really want any more colonies anyway. Yet more honesty? I really couldn't control swarming to any extent. I could provide increased brood space (which I did). I could requeen every two years (which I have not done). I could destroy swarm cells (which I did haphazardly). I could do all of these tasks, but I would still have had the occasional swarm depart. So why should I beat myself up?

### **Honey crops**

I've got all the honey I want. I have some extracted and I still have some honey on the colonies from last year. Now, it's time to prepare for

this season's crop. So far, a short honey crop has not yet been my problem. While I seem to always be behind, the bees are always on time so it will soon be time to super up. The bees won't wait.

### **Diseases and pests**

I've had one case of American foulbrood. I've had a few problems with mites. I've fought skunks. I've had minor amounts of chalkbrood. But outside my yard shack right now, there sits 14 strong colonies. I'm comfortable saying that I have won more than I have lost in this bee battle. However, I have far more mosquitoes in the yard than I feel that I need.

### **So what now?**

I make no effort to speak for all of you, but in all things, my interest waxes and wanes. I will clean up the yard and I would like to replace my "yard shack." I currently use an old truck body that works fine, but still, an upgrade would be nice. I will get supers on and I will requeen ( or maybe not).

Have I lost interest in the yard? Not in the least. Has my interest changed? Yes, for a while. Will it change back? Sooner or later.

### **Why have I confessed all of this to you?**

While I wish that this yard could be a dependable show-yard, that is simply not going to happen in a consistent way (at least until I retire). Some of you have the personality and the time to do a more organized job. Like others of you, I do the best I can with the time and declining energy I have. I don't en-



*A night swarm in Tennessee.*

*Gently placing the dark swarm in the hive body.*



joy hobby beekeeping less, but I have become more confident in the survival and success of this yard. I have become less demanding of my bee charges and of myself in this project. (As I write this, I realize that I passed through the same phases while raising my daughters.)

### What others are doing

I had the opportunity to visit Mr. Gullidge in South Alabama. He keeps most of his colonies underneath the sheds of an abandoned swine nursery. He stays out of the heat and uses an otherwise abandoned facility. His colonies looked good and both he and his colonies are established there. He keeps about 25-30 colonies (that I saw) and had them all in good shape. It was a nice visit. (Note that we "talked" about bees.)

### More night-hiving of swarms

Well, since it worked the first time, I tried it again<sup>4</sup> - hiving a swarm at night. While visiting my Tennessee brother, Dwight, a swarm call came in. Our options were: (1) go at night, (2) make major changes in the next day's schedule, or (3) forego the swarm altogether. Being beekeepers, we decided to go immediately (about 9:30 PM.)

It was a large one - probably about five pounds (This sounds like a fish story). It had been on a dwarf apple tree for several days and had bent the light tree over to where it was nearly vertical with the ground. It was easy to reach.

Night hiving procedures, so far, have essentially been the same as daytime hiving procedures. I have said, but should say again, that I have limited experience in this procedure. I have done it twice, and twice it has worked well. I don't see why it would not continue to be an okay idea - under specific conditions.

When hiving the first night swarm, it was cold and the bees were tightly clustered. The temperature was higher at the second swarm site (Tennessee) and required shaking the swarm into the

hive box. As shown in the last photo, the swarm was (mostly) placed within the (mostly) empty hive body. We gave the limb a good, sharp shake and (most of) the bees fell in. Dwight and I placed the hive on the ground, near the bees that dropped away from the hive and stood around for a few minutes. Most bees went in. There were bees that never figured out the situation and they are now somewhere else in Tennessee other than the hive, but there would have been bees left if this had been a daylight hiving event.

The advantages to night hive seem to be: (1) There are no bees flying so the cluster is as large as it will ever be, (2) There is no chance of the swarm leaving before you get there, (3) There are not usually crowds of gawking people, (4) Once in the box, the bees tend to stay there rather than immediately flying off as they sometimes will and (5) you can pick up the hive body and leave immediately. The presently-known disadvantages are: (1) It's dark and most work must be done by flashlight, (2) Lost bees have nearly an impossible time finding

the dark hive body and (3) bees tend to annoyingly crawl at night so you should button up. Based on my small observations, I would not try a high swarm nor a poorly-shaped swarm located in some other difficult position (e.g. entangled within branches).

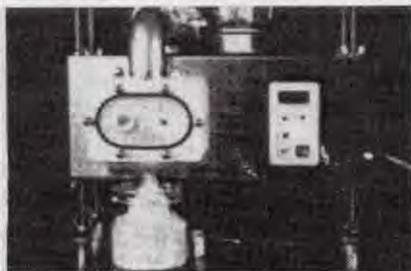
The night thing intrigues me because it is not traditional bee work time and it's cooler, but the bees don't react in the same way. They crawl much more and can get into some strange places on your clothing. Like fishing, night-hiving swarms makes for unusual stories.

### That's all

Well, now that I have confessed all in this piece, I am feeling more motivated to get the routine things done. To greater or lesser extents, I will always enjoy beekeeping. I am trying to accept the fact that I will enjoy it more at times than at other times. I hope that's okay with you. 

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<sup>4</sup> I hived a cold swarm on a cold night a few months ago here in Ohio. I simply clipped off the entire tree branch, placed it in my nuc box and went home. Entire process took 30 seconds. The bees are fine within their new hive behind my house.

# Fundamentals & Finesse of **STRUCTURAL** Bee Removal

To trap bees from a tree or building you need cones, ladders, duct tape, bait hives, . . . a little bit of luck, and plenty of patience.

Charles Martin Simon

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The seminal article on structural bee removal is found in an *ABC and XYZ of Bee Culture*, published by the A. I. Root Company. It instructs the beekeeper to prepare a small colony of bees with a queen cell for the bait hive. It instructs that the platform to hold the bait hive be attached to the ladder, although it also includes an illustration showing attachment to a building. It tells us, "On arriving on the spot he lights his smoker, blows smoke into the flight hole to drive back the bees, then he places a bee escape over the opening of the tree or building in such a way that the bees can come out but not go back in. Last of all he places his hive with the bees which he has brought, with its entrance as near as possible to the bee escape," on the platform attached to the ladder. Then, "his work is now complete, and he leaves the bees to work out their own salvation."

The article goes on to say that the field bees, having exited the cavity and being unable to reenter, will one by one find their way into the hive on the temporary platform, and, at the end of six weeks, the queen is likely to come out and join the new colony.

The operator comes at this time, removes the cone, and kills off what is left of the old colony in the cavity, which will be very few bees along with the queen (maybe). I wonder what the queen is doing in the cavity if she has come out in the last paragraph and joined the new colony

in the bait hive, but I let it go for now.

At this point, the operator leaves again, this time leaving the escape off the original entrance. Why? Because the bees from the new colony, including the bees which exited the cavity, are supposed to rob out whatever stores might be left in the cavity. The article leaves it to the imagination how the leftover bees in the original cavity are to be killed. I assume it would have to be some sort of insecticide. Is it wise then to let the saved bees rob out combs that have just been contaminated with toxic chemicals? I don't think so.

After a suitable period of robbing, the article goes on to tell us, the operator seals the entrance to the cavity and takes the bait hive home.

These are the fundamentals. Now to the finesse.

As a removal specialist for more than thirty years, I almost never use smoke during a removal. In fact, I can't remember the last time I did. I do suit up, however, and discourage onlookers, although, to be sure, I rarely excite the bees, but you can't be too careful. I used to get a little embarrassed suiting up fully to manage bees when all the cool beekeepers were doing it without even a veil or gloves. But I'm approaching unknown bees on a daily basis, and in an area where Africanized bees might be encountered at any time, so as the sage once said, "It's better to have it and not need it than to need it and not have it."

These days, there aren't that many places you can leave a ladder set up for six to eight weeks unless it's chained to something, but even then, you can't afford to have it tied up for that long. Ladders are expensive. Often in the middle of one job, you are called to another, more pressing job. Even if you have several ladders and a secure place to set up, that's exactly when you're going to need just that *particular* ladder. And another thing: There are children everywhere. If a ladder is set up leading to a beehive, some kid is going to climb it for sure, sometime, and poke a stick in the hole to see what's going on. It's inevitable. So it's not practical to attach the platform to the ladder. Sure, if you're hiving a swarm (but even then, I've found it much more expedient to hang the box with a rope than to attach it with a platform), but not for an extended removal. I would have to advise attaching the platform to the host structure, be it a building or a tree; leave the ladder free. And having said that, I need to say that I do leave the ladder set up sometimes, if it feels right, but never with anything attached to it, except maybe a chain and lock—so I can take it down immediately if necessary.

The Root article describes the wire mesh cone of the bee escape, but does not go into detail. The details are important; the cone is a critical appliance of the operation. If the hole at the small end is too small, obviously, the bees won't be

able to pass through. But if it is too big, the bees will end up going right back into it, and the operation will fail. If you set it up with too big a hole and then leave the bees "to work out their own salvation," they will do so very nicely, and remain in their chosen location, ignoring completely the destiny you have chosen for them. You will come back in six weeks to a colony in the cavity and no bees in your box. The hole has to be just right, not too small and not too big. But it must be big enough to allow drones to pass through too, or maybe not. But if your drones can't get out, expect them to die in the narrow of the cone and block the flow.

Speaking of blocking the flow, even when your hole is exactly right, bees will often either die in the neck of the escape or leave a carcass wedged there from an attempt to drag it out. When the escape becomes blocked, the operation is stopped. So you can't leave it for six weeks and expect it to be just fine at the end. You can't even leave it for a few days. When the escape is blocked, the bees will become desperate for egress and might find ways they might not have found otherwise. If the entrance gets blocked on a removal from a house, for example, and you don't correct it right away, you might find the people severely distressed by an incursion of bees into their living chambers. If pushed, bees will travel through the walls and find ways in, spaces around light fixtures being prime. You have to check it almost every day.

Now, if the progress of the job is good, the bees using the box and showing no sign of going back into the hole, I will sometimes enlarge the hole by snipping off the last half inch or so, to allow them to exit easier and reduce the incidence of blockage forming.

I mentioned before that if your hole is too big, the bees will go right back into it. That is less likely to happen a week or so into the process, after they have started using the box. So enlarging the hole can sometimes be a good move. But not always. Be careful and watchful.

But it's trickier than that. Sometimes, even when your hole is exactly right, some clever bees will figure out how to reenter it anyway.



*Suspending a bait box high in a tree is safer than leaving a ladder for any period of time.*



That can be frustrating, but, fortunately, there is a simple solution. You place a larger cone over the original cone, with the upper end of the base unattached so that the bees reentering keep finding themselves back on the outside – and innocent bees exiting for the first time have to exit twice, which they are more than happy to do. The reentering bees will go round and round many times before they give up and join the bait hive. Some of them will never give up but hang on the cone until they expire.

I have yet to experience the second cone defeated, but knowing bees and the strength of their motivation, I do expect it to happen someday. And I have a plan. I will use a third cone, and, if that doesn't work, remove the cone(s) and install a stan-

dard Porter bee escape fixed to the entrance of the cavity for a few weeks, monitoring it carefully for malfunction and plugging. Then, when the offending bees have either accepted the bait hive or perished, I will replace the standard escape with the original wire mesh cone.

The graphics in the Root article picture the cone extending horizontally from the entrance of the cavity. This is logical since most entrance holes are positioned in vertical surfaces and the cone would



*The original entrance (top), and a double cone setup.*



naturally form a 90° angle from the face, but it's not the best arrangement. Bees will find their way out better and the cone neck will have less of a tendency to clog if you position the cone pointing upward. This will probably not be generally convenient but a little carpentry in advance will make the job go much more smoothly. Sometimes, of course, the entrance will be facing downward and you will not be able to engineer it to face upward. You have to go with what you get. Although I have more than once built a tunnel to the edge of an overhang where the entrance was on the bottom, in order to have the bees exit in an upward direction.

As for baiting the bait hive, I gave up trying to find appropriate combs with queen cells 29 ½ years ago. It seems queen cells, often encountered during hive inspections, are never there when you want them. After taking apart too many hives in the effort to go by the book, I finally settled for a comb of brood, with as many uncapped as possible, though often this would be few. And found that this works fine. To complete the bait hive, I use a frame or two of empty honeycomb and a few empty frames, in five- or eight- frame nucs.

The advantage to using smaller hive boxes is obvious, or would be if you have ever tried to take a fully loaded ten-frame deep down from a third-floor roof. If they get too crowded, you remove a frame or two of bees, add them to a hive in an apiary, and replace with empty frames.

I have also found it's best not to

use a small colony in the bait hive as the Root article instructs. The bees in the colony will fight off the new bees, not welcome them in. Even many bees on the brood comb will fight off new bees. I leave as few bees as possible, trying to brush them all off at the beeyard, which is impossible. There always are a dozen or so that manage to come along for the ride, and I try to shake these off before I position the bait hive. But there are always a few, and these too will fight, but fighting at this level doesn't matter. The field bees easily overwhelm the bees that come with the bait hive when these are few enough.

In the case of difficult colonies, where the bees absolutely refuse to cooperate and enter the bait hive, it can help to leave the brood comb outside the bait hive for an hour or so, leaning against the building or tree right next to the entrance cone until it is covered with bees – then place it into the bait hive.

Whenever possible, and it often is, I like to position the bait hive with one side directly against the surface of the structure, with the entrance to the bait hive either directly to the right or left of the cone and close to the same level. When this is not possible, if for example the entrance to the cavity is up against a roof overhang, you leave the hive top open a crack for an upper entrance until the bees are using the hive, several days or longer, then close it and let them reorient to the

bottom entrance.

There will be colonies that will not get with the program, no matter what you do. The bees will cluster on or next to the cone and hang there until they die. And I've found that it doesn't work to scoop these bees and pour them into the bait hive. They will just march right out again and reform the cluster. Fortunately not many are this resolute. These clusters can be removed on a daily basis and mixed into hives in the bee yard, and the colony is thus removed the hard way.

The biggest problem will be bees finding other ways back into their cavity. They're sneaky about it, often covering up with a mass of swirling bee activity, often while using the box nicely, often when you're sure they're not doing it, so you have to watch carefully and sometimes for a long time to catch them in the act. You follow them around with duct tape and the caulking gun. Sometimes with a particularly rotten tree or building, especially if the entrance is in a shake roof, there will be so many holes you can't seal them all. I've had a few roofs literally covered with bits of duct tape. In a case like that, you can use a tarp to cover as large an area as possible around the vicinity of the entrance. The drawback to this is it's usually windy on a roof and tricky to secure down the tarp, but it can be done and has to be on occasion.

Structural bee removal by trapping is a slow but elegant process when it goes right, and it usually does when you take the time to set it up right and properly monitor the progress. When you're young, you want everything to happen fast, but when you're old, you want it to happen slow. So the older I get, the more I appreciate this method of bee removal. I can still take a heavy five-framer down a 28 foot ladder on my shoulder or head. In fact, I can do it better now than I could when I was young. But those eight-framers can get too heavy, and then I use a rope and improvised pulley to lower them to the ground. **EC**

Charles Martin Simon removes bees, keeps bees and writes for us on occasion from his home in Soquel, California. When he isn't busy with bees he is a freelance writer. See more at <http://CharlesMartinSimon.com>



A particularly precarious job. Note the cone opening facing up.

# Better Than 'Good Enough'

(Win a ribbon this year at the fair)

Ann Harman

It's that time of year! Time for county fairs, state fairs and upcoming association honey shows! Is your honey ready to enter? No? You're not planning to enter anything this year? Well, that's not a good plan. So many beekeepers think that entering a honey show takes too much time and is too much work. That is just not true. The things you do to make your honey presentable for sale are just the kinds of things you need to do to prepare honey for a show. You should be able to select the required number of jars from those for sale and come home with ribbons. Let's see what we can do to make entering a honey show easy. Then you can bring home those ribbons to display, showing customers that your honey is the best. Also, the money that may be paid as premiums will help to buy some labels, bottles or something nice for your bees.

The first step is easy. No matter what kind of honey show, large or small, local or statewide, regional or national, you must obtain the rules and regulations, list of classes and judging criteria. Without those you simply do not have a clue what to do next. Obtain this information in plenty of time before the show. Then you know whether to set aside 6 jars of extracted or only one. There is no point in showing up at a honey show with a gorgeous frame of honey in a beautiful case only to find no class for frames of honey. Make your life easy. See what classes are offered and see which ones you plan to enter.

In general honey classes may be extracted, in the various colors, chunk honey, creamed honey, cut-comb, round sections, square sections and frames. Beeswax may have classes for a block of wax, candles of various types, artistic beeswax and products such as hand creams. Some shows have a class for observation hives. Do you know what the judges are looking for?

Read those show rules and judging criteria! A show may have classes for mead, arts and crafts, and honey cookery. Photography classes are becoming more popular. See what you can enter this year but start making plans for next year's entries.

Many beekeepers think the judges are being too fussy. Does it matter if the metal lid on a jar of extracted has a ding in it? Yes—consider the customer. What about foam around the top surface? No, you do not want that—consider the customer. The customer, seeing a dinged cap, thinks perhaps something happened to the jar to spoil the contents. Foam? To the customer it means something is "going bad." As beekeepers we know where the foam came from. Your customer is not a beekeeper.

If you are using metal caps, select one without a ding and no rust, either. The plastic caps are nice. It is difficult to mess up a plastic cap. Besides, the plastic caps have a deeper rim, making them easier to open.

Learn to have patience. Keeping your honey in the settling tank for just one more day may mean that it is now clear of bubbles and those mystery bits have more time to settle. Learn the technique of filling the bottle by running the honey down the inside of the jar then righting it at the last second. All it takes is a slight twist of the wrist. Well, it takes timing, also, which comes with practice.

The fill of a jar is important. If you are using queenline or Gamber classic, these are designed to hold a pound of honey if filled to cover the bead and not more than bee space from the top. The same holds true for pints and quarts. The bead is a band that goes around the jar just under the threads. If filled over the bead on a queenline type you are delivering a pound of honey to your customer. That is what your

label says. If you fill under the bead, you are cheating your customer. Not good. In fact, illegal. If the jar is too full, almost to the top, the honey will slop over when opened. Now the customer, or judge, has honey all over their hands and on the table. Not a good impression. Learn to judge the fill correctly— for your customers and for the judge. A correctly filled jar has no air gap between bottom of lid when screwed on and surface of honey, making the jar appear full to the customer. That is a good impression. One more note—keep those jar threads clean of honey. Otherwise you will have sticky jars. These are not consumer-friendly or judge-friendly.

Back up a minute. We need to strain that extracted honey. Strain out the large bits as it flows from the extractor. But there is still some fine stuff left. Please use a synthetic fabric for straining. The sheer glass-curtain material from the fabric store is great. You may need to dampen it to start the honey flowing through. The short fibers you get from cotton, such as cheesecloth, are the start of crystal formation. You want to prolong the shelf life of your honey anyway so use the synthetic fabric all the time.

The water content of extracted honey is important. The maximum water content standard throughout the country is 18.6%. Honey at or below 18.6% will not ferment. Above that number the probability of fermentation increases with water content. Naturally fermenting honey is disgusting—it foams and stinks. Not nice for your customers. Judges will check water content with a refractometer. Most hobbyist beekeepers do not own one of these rather expensive instruments. However, a relatively inexpensive plastic model is now on the market and the ones I have checked for accuracy have



been just fine.

If you do not want to purchase a refractometer, see if your local association has one. If not, who in your area does have one? Ask if your honey can be checked, especially if it seems rather thin. If you have waited until the honey is all capped your honey is probably below 18.6%. However, in the humid climate of summer, especially during times of excessive rain, bees simply get exasperated trying to reduce the water content and just go ahead and cap it over anyway. If your extracted honey is over 18.6% either do not enter it (it will be disqualified) or blend it with some of your other honey that has a lower percentage water.

Bees have dirty feet. Pollen and propolis get tracked all over the hive. Although the coloring substances from these give beeswax a beautiful color, the wooden and plastic parts of frames and section combs get stained and sticky. Several secrets can help you to have clean frames. One secret is to lightly coat the wood with plain paraffin. This can then be scraped off along with the propolis. Also bees do not like to put propolis on something coated with paraffin. One important secret is to remove the sections, whether square or round, and frames as soon as capped. The surface of the wax cappings will get travel stained, also, if left in the hive too long. You really do not want to sell sections that are travel-stained. Your customers do not know the pollen and propolis staining is harmless - to them it all looks like dirt.

Cut-comb and chunk honey have a special problem - cutting the comb. The comb is fragile and crushes easily. Some beekeepers have good luck with the comb cutters for cut-comb. However preparing pieces of comb for chunk honey really requires a thin but very sharp knife. Chunk honey is not defined as a jar with all sorts of sizes of leftover comb. If you have odd pieces of comb either eat them yourself or cut them into small sample-size pieces and sell them as such. The comb should go from

top to bottom and side to side. The comb for chunk honey does not have to be drained but the sides should be free of bits of wax. Those bits of wax will float to the top where they can be removed with the tip of a knife. For cut comb, the comb should be drained well before packaging. Draining will remove many of the crushed bits of wax. The best package for entering is the rigid "sandwich case" plastic. This allows the best view of the comb and also is the easiest for handling.

Some beekeepers like to make creamed honey to sell, others do not. If you regularly make creamed honey for sale, why not enter some. If you did not win a ribbon, perhaps the judge's critique may help you improve your product. Good creamed honey should be like butter on the tongue. It should be stiff enough to stay put on a piece of toast but not so stiff as to tear up the biscuit or bread. Good creamed honey should not be runny and drip like extracted honey. If you have always wanted to try your hand at creamed honey, perhaps entering a show will give you the excuse.

Beeswax suffers from repeated heating to strain out the bits. Beeswax needs to be clean but you can keep the cleaning very simple. If you are selling beeswax for crafts or quilting it must be clean. Beeswax is basically colored by the pollen and the coloring matter of propolis. The color can be ruined if your water supply contains iron or you are using a worn-out galvanized pan in a solar melter. The cleaned honey will have the color of an old, dirty pair of khaki pants that should have been thrown out last year.

To keep heating to a minimum, take your cappings (no, not old brood comb mixed in) and melt in water, just hot enough to melt the wax (wax melts about 143°F). This heating will remove honey but will not harm the aroma. When the block cools and hardens, scrape the bottom of the block. Then melt the wax just over the melting point and strain through a sweatshirt fuzzy side up. The small black bits will be trapped in the sweatshirt fuzz. Select a mold that will give the weight size block required by the show rules.

After straining you may need to melt again to pour into the chosen mold.

If beeswax is heated too hot it will shrink and perhaps crack upon cooling. You can use a meat thermometer to check on your temperature. Cool the block slowly by warming your oven gently, not over 150°F, turning oven off and letting the block cool inside the oven, which may take several hours. When your block of wax is room temperature, dump it out of the mold onto a very clean surface. Bits and pieces of stuff - unidentified stuff - clings to beeswax. So protect this block from dirt of any kind. Look on the bottom surface, especially at the corners. Do you see dark specks? In a show you will lose points for that. Now here is the dilemma. The more times you melt the wax the more you weaken the aroma and also slowly change the texture. If you scrape off the specks, the judge will see that. Sometimes by using a warm iron you can iron away some imperfections. If all else fails, melt, strain and make some candles.

How about a few hints on honey cookery? Don't burn it! Nothing detracts from appearance and taste so much as burning the cake or cookies. Reduce your oven temperature 25°F and possibly check your oven temperature. Use a good tried and true recipe that has been designed for honey instead of sugar. And don't start substituting. If you do not have the ingredients, find another recipe.

You may think that honey shows are independent of your honey sales. As you can see from this article, the consumer was mentioned a number of times. In actual fact, honey shows are a good way of improving your product. Your aim should be to produce and sell the best product possible. Your bees do very good work. Beekeepers should be doing as well as the bees.

In spite of your best efforts some things can go wrong. You put your thumb through the beautiful frame of honey, the cookies burned, and that batch of mead looks and tastes like dishwater. Oh well, enter what you have left, have fun—and good luck to all of you who do enter! **EC**

*Ann Harman is a sideline beekeeper and international marketing consultant.*



# ? DO YOU KNOW ?

Honey Bee Chemicals  
Clarence Collison  
Mississippi State University

In its general form, the honey bee resembles any other insect, however, since the bee leads a highly specialized kind of life, it has numerous modified structures that allow it to live this life style. The feeding organs of the bee are very different in form because they are adapted to the ingestion of both pollen and liquids. The social structure of the colony, which includes a caste system, is very complex and is regulated by several pheromones produced by the queen and worker caste. These pheromones are concerned with the coordination

of individuals within the population. Each member of the colony has a definite task to perform and it takes the combined efforts of the entire colony to survive and reproduce. Communication and regulation of activities by chemicals in the colony is of primary importance to its success. How well do you understand the factors that regulate this complex insect society?

Please take a few minutes and answer the following questions on this important topic.

The first 12 questions are true or 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 crop or honey stomach is located in the abdomen of the adult worker honey bee and is responsible for digestion and ingestion of nutrients.
2. \_\_\_\_ When foragers discover unproductive food sources they mark them with a scent.
3. \_\_\_\_ The Nasonov scent gland of the worker honey bee is found in *Apis cerana*, *Apis dorsata*, *Apis florea*, and *Apis mellifera*.
4. \_\_\_\_ A drone congregation area may contain several thousand drones from many colonies from different directions.
5. \_\_\_\_ The proventriculus is capable of moving pollen grains into the true stomach (ventriculus) while retaining nectar and honey in the honey stomach.
6. \_\_\_\_ Expansion and contraction of the parts making up the proboscis provides the suction that the bee needs to suck up fluids.
7. \_\_\_\_ Maximum production of Nasonov pheromone occurs in nurse bees.
8. \_\_\_\_ Many of the hairs on the surface of the bee are touch sensors.
9. \_\_\_\_ Water is temporarily stored in the hive within the honey stomachs of hive bees and sometimes in cells of burr comb.
10. \_\_\_\_ Development of laying workers is inhibited by the queen's pheromones and the presence of worker brood.
11. \_\_\_\_ Laying workers are able to produce queen substance (9-oxodecenoic acid).
12. \_\_\_\_ Workers have a rudimentary, nonfunctional spermatheca.

Listed below are several chemicals associated with honey bee pheromones. Please match the following chemicals with the body area where they are produced. (1 point)

- A. Nasonov or scent gland E. Glands on the body surface
- B. Sting chamber F. Queen ovaries
- C. Mandibular glands of the queen G. Mandibular glands of the worker
- D. Brood-food glands H. Salivary glands
13. \_\_\_\_ 2-Heptanone
14. \_\_\_\_ Footprint pheromone
15. \_\_\_\_ 9-oxodecenoic acid
16. \_\_\_\_ Isopentyl acetate
17. \_\_\_\_ Citral
18. \_\_\_\_ 9-hydroxydecenoic acid
19. In what two ways does the food supplied to larvae developing into queens differ from the food supplied to worker larvae? (2 points)
20. Name two factors that regulate the development of wax glands in the honey bee. (2 points).
21. Name three senses associated with the antennae. (3 points)

ANSWERS ON PAGE 46

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# Do You Know?

## Answers

1. **False** In the anterior part of the abdomen, the oesophagus expands into the crop or honey stomach, a transparent bag which when full, occupies a large part of the anterior end of the abdomen. It serves only as a temporary storage organ, used to transport nectar, robbed honey and water back to the hive. The digestion of food and absorption of nutrients occurs in the ventriculus (true stomach) and intestine.
2. **True** Research with artificial flowers has produced evidence that honey bees may mark unproductive food sources with a scent (deterrent pheromone) which discourages other foragers. Sources from which bees are able to obtain food are marked with an attractive odor. It is likely that both attractive and repellent pheromones may be used to signal the presence or absence of forage in natural flowers, as well. It has often been observed that natural flowers that have been recently visited are less favored by foraging bees, while the flowers are replenishing their nectar supply.
3. **True** The Nasonov scent gland of the worker honey bee lies on the dorsal surface of the 7<sup>th</sup> abdominal segment. This gland is present in workers of *Apis cerana*, *A. mellifera*, *A. dorsata* and *A. florea*.
4. **True** A drone congregation area is an air space 15-25 m above ground, where drones habitually collect and fly around, independent of the presence of queens, and to which queens come to mate. There may be as many as 10,000 drones in a single drone congregation and they come from many colonies from different directions and up to 5 or 6 km distance.
5. **True** The proventriculus is a regulatory organ that controls the entrance of food into the true stomach (ventriculus). Through its action, nectar or honey can be retained in the honey stomach while pollen is taken out and delivered to the stomach.
6. **False** The sucking apparatus of the bee is a large, muscle-walled sac lying in the head known as the cibarium. The parts of the proboscis fit together tightly to form a seal and the tongue works like a piston in a pump. The tongue begins a rapid back-and-forth movement and apparently draws liquids into the proboscis. The cibarial pump draws the liquid from the proboscis into the mouth opening.
7. **False** Production of the Nasonov pheromone varies with the age of the honey bee and with time of year. Newly emerged workers have little or no secretion in their glands, but production increases rapidly during the next four weeks reaching a maximum when workers are foraging.
8. **True** Most of the sensory nerves of the exoskeleton end in cells at the bases of hairs. The hairs being delicately poised are easily moved by contact with objects or currents of air. These innervated hairs and associated sense cells constitute organs of touch.
9. **True** Honey bees collect water all of the year when weather conditions will allow them to fly and when there is not a heavy honey flow in progress. Water is temporarily stored in the hive in the honey stomachs of numerous bees of the colony. These reservoir bees remain quite inactive and stay close to the brood area. Water is also deposited on the top bars in small cell-like enclosures generally made of old wax and propolis. It is also deposited in the cells of burr comb and in the indentations of the brood cappings.
10. **True** With removal or loss of the queen from the colony, the ovaries of some of the workers begin to develop. The presence of laying workers in a colony usually means the colony has been queenless for approximately two weeks. Pheromones from the queen contribute toward the inhibition of worker ovary development. The presence of worker brood will also inhibit ovary development. Therefore, the brood remaining in a colony after the queen is lost temporarily suppresses ovary development until a new queen is reared.
11. **True** Queen substance has been found in the mandibular glands of some laying workers, which indicates that the mandibular glands are capable of producing it.
12. **True** Workers have a vestigial, nonfunctional spermatheca and also lack the various genital structures with which the queen can mate and accept sperm from drones.
13. G) Mandibular glands of the worker
14. E) Glands on the body surface
15. C) Mandibular glands of the queen
16. B) Sting Chamber
17. A) Nasonov or scent gland
18. C) Mandibular glands of the queen
19. The food supply fed to queen larvae differs from that fed to worker larvae in both quantity and quality. A queen larva is fed a surplus of royal jelly throughout its larval life whereas a worker larva receives royal jelly for only 2 to 2.5 days, then worker jelly and bee bread during the remaining days of feeding. Comparison of royal and worker jelly indicates queen larvae receive a much higher proportion of mandibular gland secretion than do worker larvae.
20. Age of the honey bee  
Amount of nectar or honey in the honey stomach  
Need for comb
21. Touch, Taste, Smell

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

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

Clarence Collison is a Professor of Entomology & Head of the Dept of Ent. & Plant Pathology at MS State Univ., MS State, MS.

# GLEANINGS

JULY, 2002 • ALL THE NEWS THAT FITS

## Honey Bee's Genes Studied NHGRI PRIORITIZES

The National Human Genome Research Institute has prioritized the next group of organisms to be considered for entry into the sequencing pipeline as the current efforts with human, mouse and rat approach completion. The organisms designated as high priority for having their genome analyzed include chicken, chimpanzee, several species of fungi, a sea urchin, a microscopic animal commonly used in laboratory studies called Tetrahymena, and the honey bee. The institute designated two other organisms, the rhesus macaque and a protozoan, as having a moderate priority for sequencing.

The decision does not specifically launch large-scale sequencing on any of these organisms. Rather, it creates a pool of candidate organisms on which the institute-supported sequencing centers can choose to begin working as capacity becomes available. NHGRI supports large-scale sequencing at the Whitehead Institute/MIT Center for Genome Research in Cambridge, MA, the Genome Sequencing Center at WA Univ. School of Medicine in St. Louis, MO, and the Human Genome Sequencing Center at Baylor College of Medicine in Houston, TX. Since the sequencing capacity of these centers is currently committed to the human, mouse, and rat projects, new genomic sequencing efforts may not start for some months. Before the centers can start sequencing any of these other organisms, they must get final permission from NHGRI. The institute will indicate on its website when a sequencing center has begun sequencing one of these organisms, as well as the strategy to be employed, and a timetable for the project.

The panel's recommendations were then reviewed in February, 2002 by the National Advisory Council for Human Genome Research and approved at its May 21, 2002, meeting.

The list of organisms accorded either high or moderate priority, and the white papers themselves, are

posted at [www.nhgri.nih.gov/DER/Sequencing/proposals.html](http://www.nhgri.nih.gov/DER/Sequencing/proposals.html).

**Honey Bee (*Apis mellifera*)**-The honey bee is a very interesting organism from several points of view: 1) its powerful social instincts and unique behavioral traits make it particularly useful to neurobiologists, 2) it is important to the agricultural community in the U.S. as a pollinator, and 3) it is relevant to human health in several ways, including the potentially serious consequences of bee stings, and as a model for antibiotic resistance, immunity, allergic reaction, development, mental health, diseases of the X chromosome and longevity. Because of its agricultural relevance, other federal agencies, such as USDA, are also interested in collaborating on the sequencing of the honey bee genome.

## BETTERBEE INC. GETS \$70K GRANT

Betterbee, Inc. has received a \$70,000 Small Business Innovation Research Grant from the United States Department of Agriculture to test the microencapsulated miticides developed by Environquest Ltd. of Toronto, Canada. Testing will take place at Ohio State University under the direction of Dr. James Tew and Dr. Roger Downer. The technology involves direct feeding of various microencapsulated substances to the honey bees to achieve a systemic result. A similar type of technology has been fed successfully to dogs to com-

bat fleas, but this is the first time researchers have been able to adapt the technology to insects.

Dr. Peter Kevan of the University of Guelph did the initial research using menthol. In the second stage of the research funded by the grant, several other substances will be checked to discover which ones the bees can safely ingest. The substances chosen for testing will all be ones that have been shown to have some level of negative effect on mites. Betterbee is a full service beekeeping supply firm in Greenwich, NY 12834.

**More Gleanings on Page 49**

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# OBITUARIES

**Robert W. Kime, 56**, died unexpectedly on May 27, at Strong Memorial Hospital in Rochester, NY. A dedicated food scientist, beekeeper and outdoorsman, Kime was committed to developing value-added products using the best that NY growers have to offer-honey, apple cider, vegetables, and fruit juices.



Kime was the operations manager of Cornell University's Fruit and Vegetable Processing Pilot Plant at the NY State Agricultural Experiment Station in Geneva, NY. "His expertise was valuable to scientists across the Station and to individuals in the private sector who contracted to use the pilot plant," said associate director Robert Seem. "His knowledge of post harvest fruit and vegetable processing was well known." Kime helped many fruit and vegetable growers and entrepreneurs develop and refine value-added products, particularly mead, hard cider, and fruit wine.

Kime was an innovative thinker who shared in several patents at the Experiment Station. He and food scientist Cy Lee developed an ultrafiltration method for honey that improved the sensory quality of traditional mead. Ultrafiltration has helped create major new markets for honey producers all over the world. They also obtained a patent on the utilization of honey to clarify fruit juice in processing.

More recently, Kime was helping hard cider producers develop better products. "Bob and the Experiment Station were instrumental in helping me launch my business," said Bill Barton, owner of Bellwether Cidery, in Ithaca, NY. "He helped in terms of the apple varieties to use, the basic formulation of the blends, and how to balance the residual sugar and acid levels. He made all the difference in turning what was only a fairly average hard cider into a very good one."

"Kime", as many at the Station knew him, was also a beekeeper and the owner of Kime Farm Honey. In the spring, he provided hives of bees to pollinate fruit trees at the Station and other area orchards and was the man to call whenever a swarm of bees or wasps proved troublesome. Harvesting wasp venom was a sideline, as was applying bee stings to arthritis sufferers, and manufacturing Kime Skin Cream—a formulation of glycerine and bees-wax he sold locally.

"Bob did so much for beekeepers," said Nick Calderone, who directs Cornell's Beekeeping Program in Ithaca, NY. "He was always coming up with new ways for the industry to use bee products."

Kime was born in Waterloo, NY, on March 24, 1946. He graduated from SUNY Morrisville in 1966, and received his B.S. in 1968 at the University of Georgia in Athens. First employed at the Station in 1968, he left in 1969 to return to the University of GA for graduate studies, and then came back to the Station in 1970 as a research technician. In 1979, he was promoted to research

support specialist. In 1995, he was appointed operations manager of the food processing pilot plant.

Kime was first vice-president of the Empire Honey Producers, a member of the Finger Lakes Beekeeper Club, Ducks Unlimited and the National Wild Turkey Federation. Among his many awards, he was named the NY State Beekeeper of the Year.

Kime is survived by his wife, Linda Horton Kime; his daughter, Colleen Kime, of Romulus, NY; his son, Shawn (Carrie) Kime, of Geneva, NY; his mother, Dorothy Kime, of Geneva; a sister, three brothers, and several aunts, uncles, nieces, nephews and cousins.

**A.D. Norman** died April 2, 2002. He was born July 7, 1920. The Normans have been raising and shipping bees all over the nation since the early 1920s. In the late 1940s you can find three different Norman family ads selling package bees. A.D. truly grew up in the bee business, where he met and married his sweetheart, Mary Clara.

A.D.—that was his full name.

The story goes that he was given the initials of the doctor who attended his birth as his name. A.D. Norman was buried April 4 at the Oakdale Baptist Church, just a few miles from his home in Ramer. As the minister said, A.D. was a devoutly Christian man who loved his family, and his bees. A.D. left behind Mary Clara, his bride of more than 60 years, his son Thomas (Norman Bee Farm); Robert (in the retail grocery business); Mary Nell (who although married with her own family, still works in the queen yards); Edward (Edward Norman Apiaries); and nine grandchildren. — by Jim Smith



More on Page 50

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## Obituary

Toge S.K. Johansson of East Berne, NY died October 5, 2001 following open heart surgery. He is survived by his wife of 51 years, Mildred Pangburn Johansson. Toge was born in Karlstad, Sweden and with his parents emigrated to the U.S. in 1923 at the age of four. They settled in Rockford, IL where he attended school. He graduated from Beloit College and earned an MS and PhD in Zoology from the University of Wisconsin. This was followed by positions at the University of Wisconsin, Grinnell College, Dartmouth College, New York University and Queens College of the City University of NY.

After 30 years of teaching at Queens College he retired as Professor Emeritus in 1984.

As a child, Toge read everything he could find in the public library about bees but it was not until 1951 when he acquired acreage in the Helderbergs that he had opportunity to actually keep bees. He published over

100 articles on bee behavior, history and management in various journals. His interest in and extensive collection of apiculture literature culminated in a bibliography of Apiculture Literature Published in the U.S. and Canada. The breadth of his knowledge led to a year at the USDA Bee Research Lab in Tucson, another at the University of Guelph and shorter intervals in New Zealand, Mexico and Germany. He left with a stack of to-do items on his desk.

## TESTING CHINESE HONEY IN AUSTRALIA

The Australia New Zealand Food Authority and the Australian Quarantine and Inspection Service are awaiting the results of tests on Chinese honey suspected of containing dangerous antibiotics.

Industry spokesman Mark Higgins said 2,500 tonnes of Chinese honey have been shipped into Australia since Europe and Canada banned the product because of high levels of the antibiotic chloramphenicol.

The flood of suspect Chinese honey was raised in the federal parliament where independent member Peter Andren asked in Agriculture Minister Warren Truss if he was aware of the situation.

Truss said it could be up to two weeks before the test results were received and a decision was taken on the Chinese honey.

Higgins said the decision was taking too long because if the Chinese product was mixed with local honey and re-exported, foreign markets could ban Australian honey within 24 hours.

Truss said the authority had looked at the situation and decided against a ban for the time being.

"At this stage, having considered all of the information available on the issue, ANZFA advised that there are no grounds to warrant recall of the product," he said.

Truss said if the testing revealed any residues AQIS had the authority to either destroy the product, order it to be treated or sent back to the country of origin. — Alan Harman

## NZ BEGINS LEVY CONSULTATIONS

The National Beekeepers Assn. undertook consultation with its members throughout New Zealand during May as part of the process required to introduce a commodity levy to fund industry activities and a levy under the Biosecurity Act.

The proposals for consideration include establishing a pest management levy so all beekeepers contribute to the control of American foulbrood Disease. Under the present system only those who have more than 10 hives or three apiary sites are required to contribute to the pest management.

The proposals also include simplifying the system for collecting the commodity levy from those who have more than 10 hives or three apiary sites. All beekeepers are invoiced for the levy and those not meeting the threshold are required to return a statutory declaration. Under the new process only beekeepers over the threshold would be invoiced.

This levy is used for research and development and funding the association.

The levy does not require a vote but the association is required to consult with members and present the results to the government.

Alan Harman

## VARROA IN NORTHERN IRELAND

Varroa mite has been found in County Down, ending Northern Ireland's status as the only area of the British Isles previously considered mite free.

A spokesman for the Dept. of Ag. said it was not a surprise that infestation has occurred.

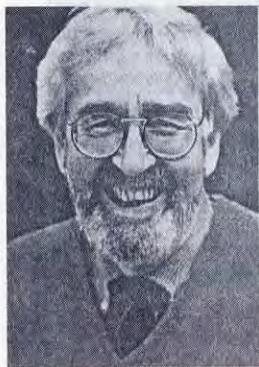
"It is widespread in Great Britain and infestations have been increasingly detected in the Republic of Ireland and gradually moving north with two border counties affected in recent years."

The department used 1998 regulations to order the hive owners to isolate, treat and if necessary, destroy the affected hives.

It also imposed movement restrictions at all beekeeping locations within a 1.8-mile radius of each of the infected sites.

"We are urgently investigating both the source of the bees in the affected hives and any outlets where there have been sales of bees onwards from these hives," the spokesman said.

The extent of the infestations will decide whether Northern Ireland's status as a protected zone within the European Union will be maintained. The status gives it power to control imports of products such as queens and semen. — Alan Harman



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# HONEY THINGS



## *Useful Things To Do With Honey - First In A Series*

Elizabeth Cole

Apitherapy, the treatment of various conditions using honey bee products, has been around a long time. Honey is one of the oldest medicines, with proof of its healing power dating back more than 5000 years. Even Hippocrates found that honey "cleans sores and ulcers of the lips, heals carbuncles and running sores." It has been a staple ingredient of folk medicines through the ages and is now gaining credibility with the current medical and scientific communities. Raw honey and honey related products have proven to be antibacterial, antiviral, healing and soothing, and to have numerous other beneficial properties.

### FIRST AID

#### Bee Stings

Dab on a bit of honey immediately. It eases the pain and neutralizes poisons.

#### Blisters

Combine 1 tsp. honey, 1 tsp. aloe vera gel and 10 drops lavender oil. Dab on blister, cover with bandage. Change bandage and repeat 2 to 3 times per day.

#### Burns

Immediately spread a thin layer of raw honey over the burn. Especially good for oil splatter type burns and steam burns, but of benefit to all types of burns. It relieves stinging, prevents blisters and infection, and speeds healing.

#### Sunburn

Combine 1 cup apple cider vinegar, ¼ cup honey and ¼ cup aloe vera gel. Paint onto sunburned skin with pastry brush or damp sponge.

#### Wounds

Medical researchers have proven that applying raw honey directly to open wounds prevents infection as well as any medication. Applying a thin layer of raw honey to any cut, scrape or scratch is beneficial.

### CONDITIONS AND SYMPTOMS

#### Acne

Combine 2 tsp. honey with contents of 3 Vitamin E capsules and 10 drops tea tree oil. Apply to pimples several times per day.

#### Arthritis

Mix together equal parts raw honey and unpasteurized apple cider vinegar. Mix 1 Tbsp. of this mixture into a glass of warm water, drink before each meal and before going to bed.

#### Asthma

At the first sign of an attack, combine 1 large, finely minced clove of garlic with 1 Tbsp. raw honey, swallow all at once.

#### Athletes Foot

Combine 2 Tbsp. honey with 1 Tbsp. vegetable oil, 1 finely minced clove of garlic and 20 drops tea tree oil. Apply generously to affected area at night, wear socks overnight. Repeat every night until condition is gone.

#### Constipation

Just before going to bed, eat one very ripe banana and 1 Tbsp. raw honey. Repeat in the morning.

#### Coughs

Core a very large onion, fill the hole with honey. Roast the onion until all the juice has run out, use the juice as a cough syrup.

or

Roast a large juicy lemon until it splits open. Take 1 tsp. of the juice with 1 tsp. of honey every ½ hour until all the juice is used up - the cough should be gone by then.

or

Place a ¼ Tbsp. freshly grated ginger in a mug, cover with boiling water, let steep for 10 minutes. Strain, add 2 Tbsp. raw honey. Take 1 Tbsp. every ½ hour.

or

Follow instructions for the previous recipe, but substitute 1 Tbsp. dried or 2 Tbsp. fresh thyme for the ginger.

or

For truly stubborn coughs, peel, core and finely chop six apples. Add 2 cups of raw honey, cook over low heat until the mixture is a syrupy consistency. Take as needed.

#### Eczema

Blend together 1 Tbsp. jojoba oil, 1 Tbsp. olive oil, 1 Tbsp. honey, and the contents of 5 Vitamin E Capsules. Add 15 drops of geranium or lavender oil if available, if not this will still help. Apply directly to patchy areas, cover with very loose wrap or bandage. Repeat several times per day. (If large areas of body are affected, try one of the baths mentioned in the Cosmetic section as well).

#### Hangover

Puree 2 cups of watermelon chunks in the blender, add ½ cup honey. Drink all at once.

# CALENDAR

## ◆ INTERNATIONAL ◆

**Canada/United States 2002 Joint Apicultural Meetings** will be held December 2-7, at the Sheraton Fallsview Hotel & Conference Centre, Niagara Falls, Ontario. Groups meeting include American Assn. of Professional Apiculturists, Apiary Inspectors of America, Canadian Assn. of Professional Apiculturists, Canadian honey Council, Empire State Honey Producers' Assn. and Ontario Beekeepers' Assn.

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For information contact Pat Westlake, 519.565.2622 or info@ontariobee.com. Also see www.ontariobee.com

## ◆ FLORIDA ◆

**Florida State Beekeepers Association Annual Convention** will be held October 23-25 at Best Inn, 3455 S.W. Williston Rd., Gainesville 32608, 352.378.2405.

For details watch the FL State Beekeepers website at: www.floridabeekeepers.org or contact Carol Roman Russell, ourbees@earthlink.net; 1274 Presque Isle Drive, Port Charlotte, FL 33952.

## ◆ ILLINOIS ◆

**University of IL Short Course on Bees & Beekeeping** will be August 17-18 at the Illinois Union and Bee Research Facility beginning at 8:00 a.m. Saturday and ending 1:00 p.m. Sunday. Lectures, hands-on workshops and information discussions will be held on Introduction to beekeeping; pesticides & bees; Bee Anatomy; Queen rearing and many more.

The fee is \$75 which includes materials, refreshments and honey tasting. The class is limited to 50 participants, so register early.

For more information contact 217.333.2910 or email entowork@life.uiuc.edu, or send check to Beekeeping Short Course, University of IL, Dept. of Entomology, 320 Morrill Hall, 505 S. Goodwin Ave., Urbana, IL 61801.

## ◆ INDIANA ◆

**Heartland Apicultural Society** will hold its first annual conference at Goshen College, Goshen, IN, July 11-13. Goshen is in the heart of Amish Country in northern IN. There will be presentations indoors and outdoors and for every level of beekeeping from novice to experienced.

For more information contact Dr. Tom Webster, Atwood Research Facility, KY State Univ., Frankfort, KY 40601, 502.597.6351, twebster@gwmail.kysu.edu or visit www.heartlandbees.com

## ◆ KENTUCKY ◆

**Annual Charles Mraz Apitherapy Conference** will be held in Fort Mitchell, KY, July 26, at the Drawbridge Inn.

Contact Kate Chatot, 802.563.3033, kjkjchatot@cs.com or Sara Cornwall, 914.725.7944, aasoffice@apitherapy.org

## ◆ NEBRASKA ◆

**The 2002 Mid-West Master Beekeeping Workshop** will be conducted July 25-27 at the Agricultural Research and Development Center near Mead.

Dr. Dewey Caron from the University of DE will join an outstanding group of regional speakers. A program and registration information can be found at [http://entomology.unl.edu/beekeep/master\\_workshop2002.htm](http://entomology.unl.edu/beekeep/master_workshop2002.htm)

For printed material and information contact Dr. Marion Ellis, University of NE, Dept. of Entomology, 402.472.8696 or mellis3@unl.edu

## ◆ MINNESOTA ◆

**University of MN Successful Queen Rearing Short Course** will be offered July 12-14 at the University. Dr. Marla Spivak and Gary S. Reuter teach this course. The cost for the 2-1/2 day course is \$75 which includes manual, lunch and refreshments.

To register or for information contact 612.624.3636, spiva001@tc.umn.edu; reute001@umn.edu or visit www.entomology.umn.edu/

## ◆ NEW JERSEY ◆

**New Jersey Beekeepers Association** will hold their Annual Picnic, July 27, at the home of Bob & Joan Hughes, 706 Groveville-Allentown Rd., Yardville, NJ 08620.

Contact Bob Hughes 609.585.4359 or Pat Henderson 973.644.9024 or email PatHender@aol.com

**New Jersey Beekeepers Association Fall Meeting and 100th Year Celebration** will be held October 4 & 5 at Ramada Inn, Hightstown, NJ.

Contact Bob Hughes 609.585.4359 or Dave Wasitowski 908.806.7611, David@sfhoneyfarm.com or Pat Henderson 973.644.9024, PatHender@aol.com

## ◆ NEW YORK ◆

**The Empire State Honey Producers Association** will hold its annual Summer potluck picnic July 27 at Dyce Laboratory for Honey Bee Studies in Ithaca, NY. Lou Berchielli, the Black Bear Specialist for the NYS Department of Environmental Conservation will be the speaker.

BBQ chicken will be provided by the association, and those attending are requested to bring a dish to pass, lawn chair and any bear reports you may have.

Contact Joe Rowland, 607.687.679 or beek6@juno.com

**The Eastern Apicultural Society** will hold their annual Short Course and Conference August 5-9 at Cornell University in Ithaca, NY.

Contact Mike Griggs, 607.564.0656, mhg3@cornell.edu or check www.EAS2002.Cornell.edu

## ◆ NORTH CAROLINA ◆

**The North Carolina State Beekeepers Association's** annual Summer meeting will be July 18-20 in Thomasville at the T. Austin Finch Auditorium.

Contact Mike Stanghellini, 919.515.1660 or Don Moore, 336.584.3195.

## ◆ PENNSYLVANIA ◆

**Montgomery County Bkprs. Assn. 2002 Beginners Beekeeping Course** will be the last Tuesday each month from March to September at The Montgomery County 4-H Center, Rt. 113, Creamery. The cost is \$10 and includes membership in the Montgomery County Beekeepers Assn.

Call Jim Bobb, 610.584.6778 or JimBobb@gct21.net

## ◆ SOUTH CAROLINA ◆

**The South Carolina Beekeepers Association** will host its Summer meeting at Clemson University, Clemson, SC, July 11-13. The meeting will be held in the Poole Agricultural Building Auditorium on campus.

Registration begins at noon, Thursday and the meeting ends at noon, Saturday. The featured speaker is David DeJong, University of Sao Paulo, Brazil.

For information contact Mike Hood, 864.656.0346 or mhood@clemson.edu.

## ◆ VERMONT ◆

**The Vermont Beekeepers Association** will hold its annual Summer meeting, July 21 from 9 a.m.-3 p.m. at Joe's Pond in West Danville. A potluck lunch will be served.

For more information call 802.388.7724.

**Charles Andros, former NH/VT Apiary Inspector** will hold four workshops at the Paul Harlow Farm on Route 5 in North Westminster, VT, 1/2 mile north of the I-91 Exit 5 ramp. Look for "BEE" sign on the west side. These workshops are all on Saturday from 1:00 to 3:00 p.m.

**July 20** topics include taking off and extracting honey, wax processing, treatment of mites and foulbrood and making propolis tincture. Bring a veil.

**September 28** topics include treatment of noseema and tracheal mites, Winter preparations, Winter protein and carbohydrate supplements and making beeswax handcreams. Bring a veil.

To register; lindena@sover.net or call 603.756.9056.

## ◆ VIRGINIA ◆

**The VA State Beekeepers** will hold their Summer meeting at Central VA Community College in Lynchburg, VA, July 19-20. The campus is located off Rt. 29 near the Rt. 460 intersection. Speakers include Keith Tignor, Wyatt Mangum, Kim Flottum and David DeJong.

For information call Ron Henk at 757.566.3911.

## ◆ WEST VIRGINIA ◆

**West Virginia Honey Festival** will be held September 14-15 at the City Park in Parkersburg, WV.

WV Honey Festival, P.O. Box 2149, Parkersburg, WV 26102; Visitors Bureau, 800.752.4982.

## APIMONDIA ... Cont. From Page 20

The authors conclude it is likely that nurse bees that eat protease inhibitors will be poorer producers of larval food in both quantity and quality. Thus, not only could longevity and learning ability of adult bees be reduced affecting their performance as forager bees, if influenced by a SBTI containing pollen or nectar source, they will probably also not be very effective as nurse bees. A crop expressing SBTI in a 1.0% concentration in pollen or nectar will, therefore, have both a direct impact on honey bee larvae through digestive inhibition (resulting in increased development time, increased juvenile mortality, and individuals surviving to adulthood being smaller) and an indirect impact by nourishment depletion through affected nurse bees. They suggest the *in vitro* rearing technique presented in the paper should be included in an environmental risk assessment procedure before releasing transgenic plants into the field.

Although the folks at Rothamsted and elsewhere are raising the bar on studying GM crops, one can only be cautiously optimistic at the present time. The history of much of plant breeding, for example, although rife with successes in producing plants with various desirable characteristics, has often ignored their reproductive processes. The funding for genetically modified research has been oriented toward the biggest "bang for the buck." Thus the advice of Dr. Guy Poppy, research entomologist at Institute of Arable Crops Research (IACR) Rothamsted, UK <http://www.res.bbsrc.ac.uk/entnem/> is now more important than ever. In an editorial concerning transgenic plants and honey bees in *Bee World* (Vol. 78, No. 4, 1998) he said: "We must try to ensure that ecological studies do not become the poor cousin of biotechnological ones." ☐

*Dr. Sanford is former Extension Specialist in Apiculture, University of Florida. He published the APIS Newsletter: <http://apis.ifas.ufl.edu>*

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would be shut down they would start a new promotion program. Packers and Importers will pay the assessments with an exemption level of 250,000 pounds. There will be approximately 100 people paying assessments. It could take up to nine months to get started and once started the current NHB would be shut down. The Packer-Importer Board will consist of strong business minded people and they will do a great job. Producers will have two voting board seats along with one cop, four handlers and two Importers. The AHPA will work hard to see that five percent of the assessments will go to bee research and this money can be used to receive matching grants and stretched even farther. This would be far more money for bee research than we ever received with the current NHB. The Packer-Importer Board will be very streamlined and be much more effective with more bang for the buck than our current NHB. Simply by reducing the assessment payers from 3800 mailouts to 100 will shrink the oversight and administration cost which will allow more funds for research. This is a win win for the U.S. honey producers!

Lyle Johnston  
President AHPA

*From President, American Beekeeping Federation*

Before we went to the NHB Roundtable in Chicago, all the participating organizations were asked to list their five priorities. The American Beekeeping Federation's priorities were:

- 1) A less costly nominations process that still represents the best interests of the various Industry segments.
- 2) Review assessment exemption levels while protecting the interests of domestic producers.
- 3) Update plan to handle food safety issues.
- 4) Find ways to emphasize the importance of honey purity and safety to producers, packers and importers.
- 5) Recognize the fact that the National Honey Board has increased the per capita consumption of honey.

The plan for the Roundtable was (we thought) to find ways to improve the National Honey Board and make it more responsive to industry needs.

We were into the meeting less than an hour on Friday morning when AHPA announced their own plan: they would continue their current lawsuit against the Honey Board until they either won or lost, and if they lost they would begin collecting signatures for a petition to force a referendum to terminate the Honey Board.

Next, the importer group said that production and morale of the Honey Board staff would continue to suffer if litigation was ongoing. The cost in time and energy were a negative drain on the Board and its work. They said had they known it would continue even after passage of the referendum, they would not have supported passage. (Remember, without the importers' poundage being voted "yes," the referendum would have failed.)

At this point, all negotiations toward improving the current Honey Board collapsed and a new packer-importer honey promotion board was proposed. We (the ABF delegation) expressed our displeasure as well as our dismay that the Roundtable process was derailed in such a fashion.

We felt the ABF's only option was to make the best of a very bad situation. Vastly outnumbered in our effort to serve the best interests of the U.S. honey producers, we fought to get two voting producer seats on the proposed new board, and we tried to get a firm allocation for production research. The facilitator asked all the groups to endorse the proposal for a new board. All the groups except the ABF readily agreed. We said we had to clear it with our Executive Committee first.

That night, we had a lengthy conference call with the ABF Executive Committee, which decided the full Board of Directors should make such an important decision, and that decision will come after up to 60 days of studying the proposal. Thus, of the six organizations at the Roundtable, the ABF was the only one not agreeing on the spot to shut down the current National Honey Board and replace it with a new board controlled by the packers and importers.

The packers, producer/packers, and importers are weary of all of the turmoil surrounding the current Honey Board. They feel the disruptive tactics pursued by the AHPA have crippled the Honey Board. They want to move to a board that is less divisive and less controversial. They see a packer-importer board with token producer input as the means to achieve that goal.

I, too, am weary and wish all the turmoil would cease; however, I don't want to relinquish our ability to guide the board in a way that is beneficial to the U.S. honey producer. The most common complaint about the Honey Board from producers has been that not enough has been done to help sell domestic honey. I fear the proposed board would do even less to benefit the U.S. producer.

If your ultimate goal is to no longer write a check to the Honey Board, you won't be pleased with our stand. But, if your goal is to get the best board possible with protection for the producers, I feel we're pushing in the right direction.

Pat Heitkam  
President ABF

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