Bee Culture

DEC 2002

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Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

DECEMBER 2002 VOLUME 130 NUMBER 12

FEATURES

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Santa Bears, make your honey special, and your profits soar. Make these special seasonal sales this year. See how on page 43.
Photo by Nancy Tozier Sieling

DEPARTMENTS & COLUMNS

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MAILBOX

Bad Meetings

Buzz Phillips' article "Avoid Bad Meetings" was a real hoot to read. Not because it was so unreal but because it is so often the way it is. In fact, readers involved in meetings in general, and some that are corporate in character, could profit from his observations. As an emeritus college dean beekeeper, I have witnessed too many professional educators' presentations that displayed most if not all of his negative critique on 'better to stay home and clean the chicken house' meeting experiences.

Robert S. Hough
Beaver Falls, PA

Lets Tell The Truth!!

The American Beekeeping Federation continually wants to take the full credit for all the good work that is being done in the Industry.

Pat Heitkam, President of American Beekeeping Federation, wrote an article in the November issue of the American Bee Journal, where the American Beekeeping Federation takes full credit for all of the improvements that have been made in the Bee Industry. LET'S TELL THE TRUTH!!

1 The American Beekeeping Federation likes to take credit for the best honey prices in five years. The truth is if the American Honey Producers Association and Sioux Honey Company had not brought an antidumping suit against China and Argentina, the Industry would be lost. There has been over $750,000 paid in legal fees to reach the point that we are now. The American Honey Producers and Sioux Honey have handled the majority of this financial burden. The American Beekeeping Federation, according to their financial statement, has collected over $50,000 for this endeavor and has donated only $657.00 as of the writing of this article. **Where is the remainder of the money that was collected?**

2. The ABF, would like beekeepers to think the National Honey Board helped bring the prices up to the level they are now, but all the Honey Board has done is make a market for cheap imported honey at the expense of the American beekeeper

3. The National Honey Board called "The American Honey Producers Association" to find out what our position was on the chloramphenacol issues in Chinese honey.

4. The National Honey Board, ABF and some packers wanted the FDA to set tolerances on chloramphenacol in Chinese honey, but the American Honey Producers said "**NO WAY.**" We told the National Honey Board that the honey industry needed zero percent tolerance on chloramphenacol. With the AHPA working with the FDA, the government has started checking Chinese Honey at the ports of entry.

5. The American Honey Producers Association and Sioux Honey Company have worked hard along side the American Beekeeping Federation in Washington to save the much-needed Bee Labs and also to include honey in the new Farm Bill. This was a joint effort coordinated by the American Honey Producers Association attorney John Waits and could not have been accomplished by one organization.

The American Honey Producers have worked very diligently and will continue to work for the Beekeeping Industry. We are dedicated to the continued improvement of this vital industry and appreciate everyone who has helped bring about the changes that we are now enjoying.

Join us in Baton Rouge, LA for the 2003 American Honey Producers Association annual convention.

Hubert Tubbs, Vice President
American Honey Producers Assn.

Honey Board Fails

In disbelief I read the letter in the November issue of *The American Bee Journal* thanking the National Honey Board for their work on the contaminated honey from China! The letter was from the ABF VP. The American Honey Producers Association was involved with FDA from the get go and I have a quite different spin than he does:

After the find of chloramphenicol in Chinese honey was detected in February the NHB staff put together a conference call that included the ABF and the rest were packers and importers. The AHPA was not asked to participate in this call even though our members pay the majority of the NHB's assessment. In the NHB conference call it was determined that a group be sent to Washington, DC to meet with FDA to try and work through this. Again, the NHB did not ask the AHPA to participate as only packers and importers were asked. The fear of the AHPA was this group was going back to try and set tolerance levels of chloramphenicol in honey. This raised a red flag to the AHPA so we approached the FDA and were granted a seat in this meeting. The AHPA made it clear that there should be no tolerance levels of chloramphenicol in honey! Since then there have been 52 container loads of Chinese honey that were contaminated and detained by FDA and U.S. Customs. This was a victory for the U.S. honey producers!

The NHB took the approach of trying to sweep the contamination problem under the rug and hope that it would go away. The ABF President contacted me and tried to get the AHPA to "back off" our position! They felt the public would stop using honey if the word got out about Chinese honey. The AHPA believed con-

Continued on Next Page

MAILBOX

sumers have a right to know what they were eating and we believe if you make a mistake face up to it and admit it! All of a sudden, when food industry users found out about the Chinese contamination they became very aware of what they were using and began requesting contracts with packers that clearly stated no Chinese honey would be used. They could not risk contaminating their products with Chinese honey. Also consumers are becoming more aware at the retail level to look at labels.

The NHB has hired a firm in Sacramento, CA to handle their press releases. This adds cost and overhead to the NHB. The most recent press release was to the food users of honey in the U.S. to explain why the price of honey was high. They attributed the high price of honey to the antidumping suit and no mention of the contaminated honey from China that was not let into the U.S., creating the shortage of honey!

It seems the ABF is telling beekeepers they supported the antidumping action and are taking credit for the higher honey prices! Let me set the record straight, when the AHPA asked the ABF for help with the effort the ABF Executive Board voted NOT to support us but "THEY WISHED US WELL IN OUR ENDEAVOR." I will never forget those famous words.

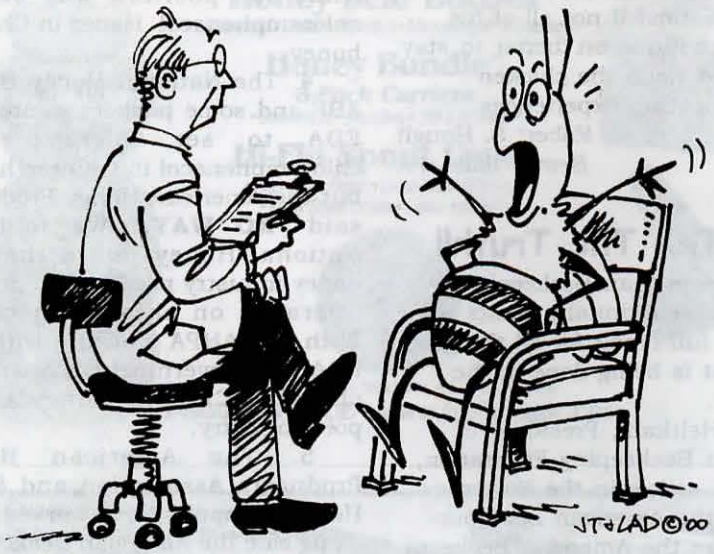
Today we are all enjoying great prices and this is a result of the work the AHPA has done for U.S. beekeepers. It has become quite obvious that the U.S. beekeepers support what we have done as our membership has grown by 700 new members in just three years. Many beekeepers in the U.S. realize that the AHPA gets things done for the benefit of U.S. honey producers. The AHPA will continue to work hard for beekeepers and we hope to see you at our annual convention in Baton Rouge, LA January 7.11.

Lyle Johnston, President
American Honey Producers

Disease Diagnosis Reopens

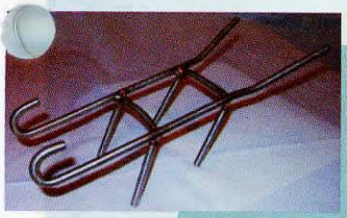
After the anthrax problem, all mail sent to the USDA-ARS in Beltsville, Maryland was delayed and treated/irradiated. Recently, we have been notified that the special treatment of mail has been relaxed. Therefore, when sending bee samples to the Bee Research Laboratory for disease diagnosis, you may use regular mail that should reach us in a timely manner. Of course if you want a sample to reach us quickly, you may still use overnight delivery.

I. Barton Smith, Jr.
Beltsville, MD



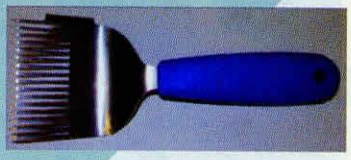
"WHAT DO YOU MEAN I'M ALLERGIC TO POLLEN?!?"

New In '03



B & B Honey Farm is introducing a newly designed **pail perch** for use on double walled bottling tanks, sumps or clarifiers. This perch has all the features of our regular pail perch such as pail hooks, which keeps it from falling off backwards if there is crystallized honey in the bottom of the pail. It is also made of the same welded stainless steel with the uniquely designed pail holders, which prevent the pail from rolling off.

Also new is the finest **cappings scratcher** ever invented. This is a real tool, not a plastic toy, imported from Germany and crafted from laser cut heavy gauge stainless steel, it is a one piece unit meaning that the handle and scratcher are cut from one piece of stainless. On the side of the tool is a knife-edge for scraping top and bottom bars. It has a super comfortable silicone handle cover. It can be used for traditional cleanup of uncapped frames or it can be used for all the uncapping. You'll never have to buy another one.



A new generation of **barrel gasket** technology that has many advantages over the old standard cellulose or the rubber ones that have been used in the past. This new gasket was designed especially for the honey industry but has applications for many products commonly packed in 55-gallon open top drums.

THE ADVANTAGES

- Constructed from FDA approvable materials.
- The material is closed cell poly, which means they will not absorb moisture or honey and therefore provide a sanitary seal.
- The ends are fused so there will be no more split gaskets when the taping on the old ones fails due to age or storage conditions.
- They are significantly lighter which will reduce shipping costs.

- Because they can be bent in any manner or crushed without damage, shipping volume and storage space is reduced.
- They do not require adhesive to attach to lids so barrel clean up for reuse will be simplified.
- Easy to install as they grip the lid and do not fall out when applying the lid to the barrel.
- Pricing will be less than currently available products.

All the negatives of the old technology have been addressed and corrected.

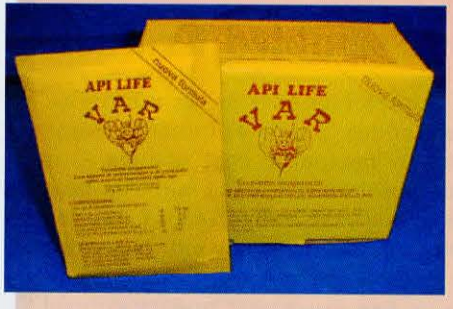
800.342.4811

From Brushy Mountain

A customer of ours greatly improved our **Beltsville screen**, which is used with a solid bottom board and we are proud to offer it this year. This will give you all the benefits of screened bottom boards without having to replace your old bottom boards and make it much easier to clean out debris, increase air flow, and monitor mite levels. To use Guy's screen you turn your bottom board around 180°and place the screen on top of the bottom board. The cypress landing board of the screen is only 3/4" above the old entrance and the open back of the old bottom board is left open for cleaning out of debris, additional circulation, or mite fall monitoring. Cost is only $7.50 each or $7.00 for 5, or $6.50 each for 10 or more.

Finally a **refractometer** that any beekeeper can afford! We tested this unit against more expensive models and both units consistently read the same with different types of honey at different temperatures. The automatic temperature compensation system assures you will know exactly what the moisture is in your honey. All this for only $79.95

A product-utilizing **essential oils** if finally here and should be available for Spring treatment. It will be distributed in 30 states under an experimental use permit from Brushy Mtn. Bee Farm only! Api Life VAR is 74% Thymol, 3.7% menthol, 3.7% camphor, and 16% Eucalyptol in a base of vermiculite. This product has worked well in Europe for over 10 years and will work for you. Give your bees a break from those harsh chemicals you have been using by giving them a herbal treatment this year. Mites that are resistant to Fluvalinate and Coumophos are not resistant to this all-natural formulation Break one tablet into 4 parts and put one on each corner of the hive body. Return in 7 to 10 days and repeat twice. Price for this product has not yet bees set but will be less than Apistan™ or Check Mite Plus™. Each pack contains two tablets and three tablets per colony are required.

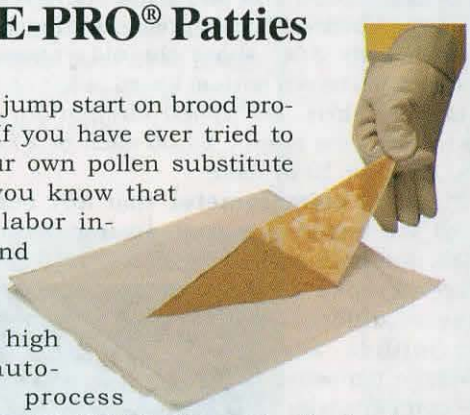


800.233.7929 •
www.beeequipment.com

MANN LAKE – EZ-Lift

With this ingenious steel hive truck, you can single-handedly move hundreds of pounds! By simply walking the cart into the first or second box of the colony, you can re-palletize, rotate boxes or move bees. The retractable hive catch slips easily into the hand holds for secure lifting and adjusts to lift deeps or shallows. Amazingly responsive, you can maneuver and adjust a colony with ease.

– BEE-PRO® Patties



Get a jump start on brood production! If you have ever tried to make your own pollen substitute patties, you know that they are labor intensive and make a big mess! Our new high speed, automated process makes our Bee Pro® Patties cost effective for even the largest beekeeper. The most complete pollen substitute feed available. These individually sealed patties are a complete source of protein and carbohydrates for the production of larval food. With the food immediately available inside the hive, there is no dependency on the weather for foragers, making it readily available to the bees 24/7

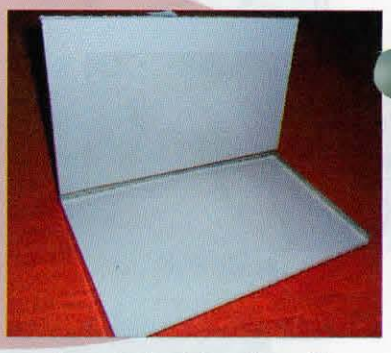
– Assembled Frames

We all want superior quality at an affordable price and we have added a new automated frame assembly machine for maximum cost savings. Our new and improved assembled frames can't be beat for quality! You asked us to glue the frames for added durability and we took it a step beyond. Now, our new assembling equipment not only staples and glues the frames, it has automatic quality control sensors that detect and reject when a staple is missing or incorrectly inserted. Try them and see if you don't agree they are the best in the business!

800.880.7694

From E.H. Thorne

Silicone Press



Simple to use foundation press with perfect registration every time.Stainless steel body, silicone rubber cell formers. Maximum sheet size is 245x425 mm. When profficient you should be able to make 30 sheets per hour. Simply pour in the liquid wax, close the mould and immerse the whole thing in cold water. Full instructions provided.

DI Suit

DI stands for Disposable Inspection. An all-in-one suit that weighs only 200g. Made from strong and breathable polypropylene with a full length zip. Quick release velcro fastened veil, elasticated wrists and ankles offering adequate protection for those quick apiary visits. If disease is a problem in your area prevent the spread by simply throwing the suit away. If you are going on holiday and think you might see a few hives then this is the suit for you instead of packing you big, bulky, smokey coveralls and veil. Sizes-M,L,XL.

Syrup and Wine Testers

Following on from the introduction of our inexpensive **Honey** refractometer we have introduced a **Syrup** version for those who like to make jam/preserves and for those who still have time after all that honey and jam we have a **Wine** refractometer. All three are the same price.

sales@thorne.co.uk

Freeze-Dried Powdered Fruits

Mid-Con has added freeze-dried powdered fruits to their product line. These fruits are processed using a refrigerated vacuum drier, which retains the natural color, flavor and nutritional value of the fresh fruit. Mid-Con owners, Cecil and Joli, wanted a natural product to add to their own creamed honey. Currently they have blueberry, blackberry, raspberry and strawberry. They are conveniently packaged in 12 oz. bags. Each bag will make one 4-5 gallon batch of fruit flavored creamed honey. These fruits have also been used in mead. Packages include full directions on how to make flavored creamed honey.

Victorian Containers

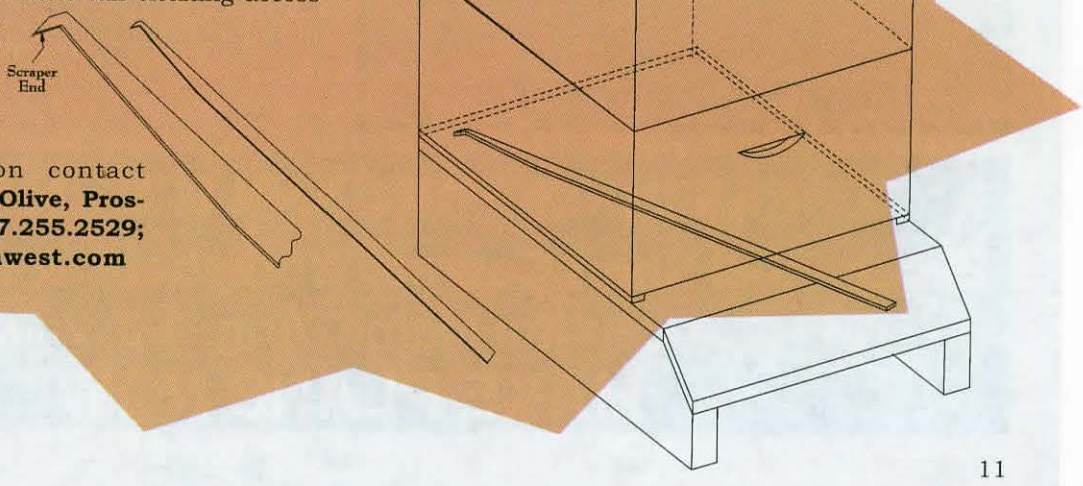
This unique line of clear glass jars is perfect for your honey products. These square jars with rounded edges are great for chunk honey, creamed honey, pollen and liquid honey They are available in four sizes and come with a gold twist lid. These are available in 110 ml (5 oz. honey), 190 ml (8 oz. honey), 292 ml (approx. 12 oz. honey) and 375 ml (approx. 16 oz.- 1 lb. honey).

Multi-Skep Tapestry-Throw

This beautiful tapestry throw will perk up any beekeeper's décor. Also makes a wonderful gift or auction item for your beekeepers' club. The body of the throw is in a very neutral golden color and is covered with skeps. The border is multi-colored with bee skep birdhouses and hummingbirds. The dimensions are 53" X 65" and it is machine washable. Made in the USA. Item #27II. For information about these products contact Mid-Con at www.mid-conagri.com or call 800-547-1392 to request a catalog.

Hive Tool Cleaner Tool

The tool is a 28-inch long hive cleaning device that may be used throughout the dormant season or on cool Fall and Spring nights to remove debris and dead bees from the hive bottom board and screen. It's 3/16 height fits perfectly through extended comb and queen cells formed on the bottom of the primary super's foundations. It is made in the U.S. of corrosion proof 6061 aircraft grade high strength aluminum alloy. With the scraping end of tool you can have full cleaning access to the back of theh ive. It has been field tested for two years in the Chicago area. It can remain outdoors on top of the hive at all times.



For more information contact **Driscoll Products, 203 E. Olive, Prospect Heights, IL 60070, 847.255.2529; Patrickdriscoll@wideopenwest.com**

From Bee Commerce

OPTIVISOR EGG MAGNIFIER Spotting tiny eggs can be a big challenge for beekeepers. But not anymore. This high quality binocular magnifier from bee-commerce.com brings eggs into sharp focus by enlarging your view 250%. Magnifier tilts up and out of the way when not in use, and can be worn over prescription eyeglasses and under your veil. A quality precision instrument that greatly improves vision and will increase your efficiency during hive inspections. You'll wonder how you ever did without our OptiVisor.

HONEY BEE GARDEN STONE Everyone raves about these unique ornamental stones. Each natural river stone has a honey bee design deeply engraved into its smooth surface. And because these are *real stones*, no two are exactly alike. Place one in front of your hive to keep grass and weeds from blocking the entrance. Use one as an accent in your garden. Or buy several and create a beeline pathway to your hives. Each natural stone is approximately 12 inches wide and two inches thick. Stones are hand carved, so please allow three weeks for delivery.

only from
www.Bee-Commerce.com

Walter T. Kelley

Screened Bottom Board

This replaces your existing Bottom Board. It includes a debris board for quick and easy check of *Varroa* mite. The Screened Bottom Board can be left in place year round. For an open bottom hive, simply remove the debris board. The screen remains in place.

800.233.2899

O.K., have we whet your appetite? This sampling of What's New For 2003 was meant to do just that The catalogs don't come out for another month, maybe longer, but this year, you're on the cutting edge and already know what's in store.

Thanks to these suppliers for sharing their secrets.

Apis APHIS - A New Species Of Exotic, Highly Undesirable Honey Bee

James Fischer

The End of Beekeeping in the USA?
Perhaps. But not if everyone stops posturing and playing "World Trade" games. We must think clearly, and act less like adversaries. All of us.

The Threat? It's the "next *Varroa*", the disease or pest that gets those still keeping bees after so many gave up.

The Carrier? Call it "*Apis APHIS*" to honor the USDA Animal and Plant Health Inspection Service, who feels that bees from New Zealand or Australia can be sent direct to USA beekeepers with only the unverified claim that they are "free of diseases and pests".

Apis APHIS is any uninspected bee from far away. If you're not sure what it is, then it's *Apis APHIS*. It may be too late to stop it's spread without Congressional action. Check the web site listed at the end of this article for the full updated story.

Why Only Tell Us Now? Sorry, we all dropped the ball. You did, too. In August, the USDA put out a notice in their unique dialect of English called *administrivia*. No one understood it.

Because it mentioned "New Zealand", "Australia" and "World Trade", it looked like more paperwork for countries who feel somehow entitled to "market access" simply because they spent years trying to "trade" without first trying to earn our confidence.

But this time, APHIS was somehow intimidated into acting as a World Trade cheerleader, rather than the health inspection service they are.

The Documents Are Complex No one really knows what it all means. And the "public comment period" may end on November 18, 2002. I say "may end" since it is Halloween as I type this. It might be extended to Jan 31, 2003, as we asked. But the basic problem is that the proposal is based upon *blind trust* in the ethics of for-profit companies to NOT ship bees with diseases or pests. Regardless of the details, we are asked to trust strangers to do things, do them right, and tell the truth.

"Trust Me" Is Not Biosecurity. Such things need to be *independent* of trust. Objective metrics and assured checks and balances are all anyone can trust.

But There Is No Check-And-Balance, no controls at all. APHIS won't do any inspections under this proposal. Worse, both New Zealand and Australia have recently lost much credibility in biosecurity. They let large and obvious external pests into their apiaries – *Varroa* and small hive beetle. (See the website for details.)

But these countries insist, and APHIS is having its arm twisted to agree, that we have no right to control their imports at all, because we "already have" all the diseases and pests that they *know about* and *admit to having*. We do have pests, but not *everywhere*. And we don't need more. Including the ones no one has yet identified. But look at how these two countries do business with the UK...

It Is Different There. They have reasonable controls. They have licensed importers. They replace all imported worker bees with "local" workers, sending the imported workers in for tests, and keeping records. They won't import *Apis APHIS*, they will *know* what they have. Anyone can see that by replacing workers, you reduce risk by orders of magnitude.

So 10 imported bees, one or all perhaps carrying something nasty is suddenly only one bee (the queen). They can even do a visual inspection on the queen. One assumes that the import attendants go right into a vial, empty queen cages go right into the incinerator, and records are kept.

If tests find a disease or problem, the lab reports it. And that's control.

It Is A Real SYSTEM. A system we can copy, rely upon, and improve, so no one has to depend solely upon fallible human individuals who might get greedy, or lazy, or make a mistake.

And it appears to work. In fact, this exact set of controls was able to settle a recent *Varroa* issue without any shouting, and without fingers being pointed. A miracle in World Trade.

What About Packages? Packages are a more difficult issue, given the poor track record of all countries in controlling even a single outbreak of an exotic disease or pest.

But after a few seasons of queens with no problems, confidence would be better, and a basis for trust would exist. Perhaps one could sample a few bees from each package, and run them through the same tests as the workers. This needs discussion.

Will World Traders Listen? Is anyone going to let mere beekeepers help negotiate a "disease control protocol"? That would just be too rational and obvious. So we may have to convince APHIS, the prospective exporters, and the WTO trade reps to agree that objective metrics and checks and balances are good business for all.

But New Zealand and Australia must first realize that *everyone* has the right to guard against importing a pest or disease, even one we already "have". No one's perfect, and we admit we aren't. Maybe they can too, and realize that it is the first step in doing business with integrity.

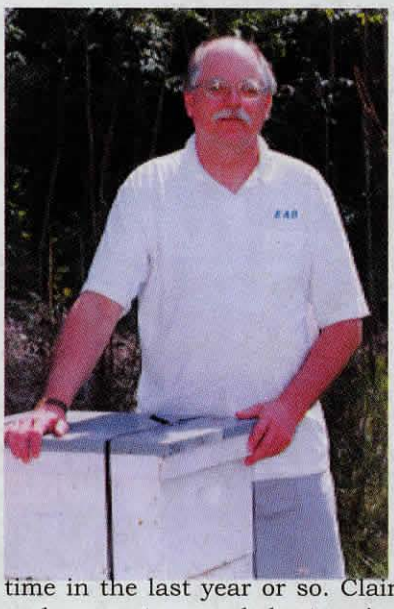
These Are Just My Ideas. You certainly have your own ideas. I just hope that the comment period is extended so you can express them yourself, rather than having to "write your Congressman". So, go find a computer, and pull up this website **www.beeculture.com/imports** to find out what's happening. We will have lots more sorted out by the time you read this.

But I can't say if you will find a page asking you to write your Congressman, or if you will find a tidy list of issues to consider and comment upon in a thoughtful manner.

I guess it will be a Christmas surprise for all. Go ahead, push the button, and Merry Christmas!

I hope.

Thanks to both *Bee Culture* and the *American Bee Journal* for yelling "stop the press!" and running the same article at the same time. They never did that before. That's how serious *everyone* is about this.



INNER COVER

Have you thought about liability insurance lately? Probably not. You have it because you need it by demand from a customer or you have a healthy case of paranoia. Or, you don't have it because the cost seems prohibitive for such a small operation and of course 'it will never happen to me'.

Whether have or have not, that part of your life is about to change. Insurance companies have not had a financially easy time in the last year or so. Claims have escalated in both number and amounts awarded, stressing their bottom line. For awhile insurance companies were able to partially compensate with investment income from a rich stock market. That's history, and that income is gone. But claims haven't gone down. In fact, if you follow these things, they've gone a tad crazy. For instance, not too long ago a stinging incident would be settled for $500 - $1000 or so. But only a very few recent settlements over $100,000 have caused companies to look again at premiums, and at the wisdom of even engaging in this sort of exposure. If you were once paying in the neighborhood of $300 - $400/year for a million dollar comprehensive general liability policy, you can expect to pay over $1000 now for the same coverage. If you can even get it that is. And tort reform is still in the planning stages (or not) in most states.

If you've been relying on your homeowners policy to protect you, better to again check to see if that's still the case. And yes, if you haven't asked before, you better find out. And yes, you may be told if you don't remove those bees, you'll be removed from the company. And yes, you may have just opened a Pandora's box that I suggested you open, and it caused you a ton of grief and it was my fault. Yes indeed. I take full responsibility. Blame me.

If that does happen, other options may be available. Check Farm Bureau. Each state FB is independent and some do and some don't cover beekeepers. Many Independent Insurance Agents, especially those focusing on agricultural coverage may have what you need. Expect premium rates to be examined in the near future, if they haven't already, and expect them to be higher than you remember.

No, it's not fair. But neither is claiming bankruptcy because of a monstrously huge lawsuit, 'that would never happen to me'

•

Have you been following the flap about bees from New Zealand and Australia? The comment period is either closed (as of Nov 18), or not, if the last minute protest had effect. If it did close, the rest of this is purely for entertainment.

Reasonable risk is the argument to allow them in. That and free trade. Several scenarios have evolved as a result of this thinking. Good science says we have everything they have, so what's the problem? They say they have control over what comes in, (and goes out), so nothing will change in that regard. Well, *Varroa* got established in NZ before anybody caught on. And you can see *varroa*. And small hive beetle was just found in Australia. And you can see small hive beetle. Yes, they both did the same here, so you'd think that experience would tell those in charge a thing or two – it ain't easy being clean. Those big bugs got through in both places, which begs the question - what tiny creatures are lurking in a hidden hive in the out back waiting to come ashore here? And how would anybody know? There's a credibility thing here worth considering, goes one suggestion often heard.

But, So what? Is the response from many here in the states. We can lick anything that comes along (isn't that why we saved the Bee Labs, to lick anything that comes along?). And if I can get queens even earlier than from Hawaii, then let me have them, goes this sentiment. I need that edge to make my business work even better. Alas, financial and marketing arguments can't be used in defense of, or defending against sending foreign bees here from anywhere.

And if we get sticky with these guys, what happens when we start pushing Canada to open up? It's a goose and gander thing, say others. What's fair's fair, right?

There's more. Rumors of quid pro quo – our (name your agricultural export of choice) traded for your bees, no questions asked, and no inspections either. We're all friends here, right?

Besides, they've been coming into Canada, and from there to here for years. And Canada is doing just fine, right? Right. So what's the problem?

We pay analysts, scientists, politicians and statesmen lots of money to answer those questions. Sometimes we pay the courts to settle them, too. Let's see what they decide, maybe again.

Oh, if the comment deadline was extended to January 31, and you want to comment (and you should want to, one way or another), send an email TODAY to regulations@aphis.usda.gov. The subject MUST be "Docket No. 98-109-1" Include your name and postal address to show that you are a U. S. Citizen. And include YOUR comments on why this should, or shouldn't happen.

Some Things Barely On, and Barely Off The Radar

Have you ever tried to scoop up sand with a pitchfork? As you can imagine most of the sand falls through and is lost. To many, the National Honey Board is doing the same thing with the money they receive from domestic producers. Their fiscal controls on money rival how children act when they get their allowance. They spend uncontrollably on items that have value only to them. Example. At a recent board meeting in Omaha, NE the nominations committee was there also. It cost somewhere around $50,000 to $60,000 for that committee only. The Honey Board took every one on a field trip to Sioux City, IA to visit Sioux Honey! If any of that cost was borne by the Honey Board, it was a waste of *your* money.

What has been the National Honey Board's impact on the business it was initially started to promote? What major program sticks out that has promoted honey to the American people? Which promotion has had a major effect on your business? How has the National Honey Board helped in the price increases or price stability of your product through promotion and research? Don't tell me that the consumer has a 96% "feel good" quotient about honey, or that customers have a better feeling about honey than sugar. Let's use true measures that gauge success. For domestic producers that is price, and for honey packers it is price.

I love the question "Where would we be without the National Honey Board?" My answer is that honey prices would have risen to a higher level sooner and been much more stable than what has happened in the past 15 years. Also, the industry would have had $45,000,000 more to spend, but it went on trips all over Hell's half-acre to attend meetings telling people all the good things they have done.

I see that the Honey Board is blowing their horn at how well the readiness plan worked. Their only plan is to *not* talk about the problem that contaminated Chinese honey has caused. They chose to hide the problem. They have taken the same path as the apple industry did with Alar, which, if you recall caused a great deal of pain. By not addressing the Alar contamination *before* the TV story broke was a huge mistake, in a series of mistakes for that industry. By not addressing the contaminated honey problem who was the National Honey Board protecting?

I understand the Board has contracted with a public relations firm in California to do their public relations. Wasn't that a function of the current staff? Is this just another expense that becomes easy to justify when spending someone else's money?

News releases from the Honey Board, say that the reason for high honey prices are twofold. The first is the drought and the second is the high tariffs due to the antidumping. There is no mention of Chinese honey contamination. In Europe the public has been informed, and the same in Canada. There have been articles and warnings printed. The public in the U.S. is not aware of the problem. Do we need to issue our own warning?

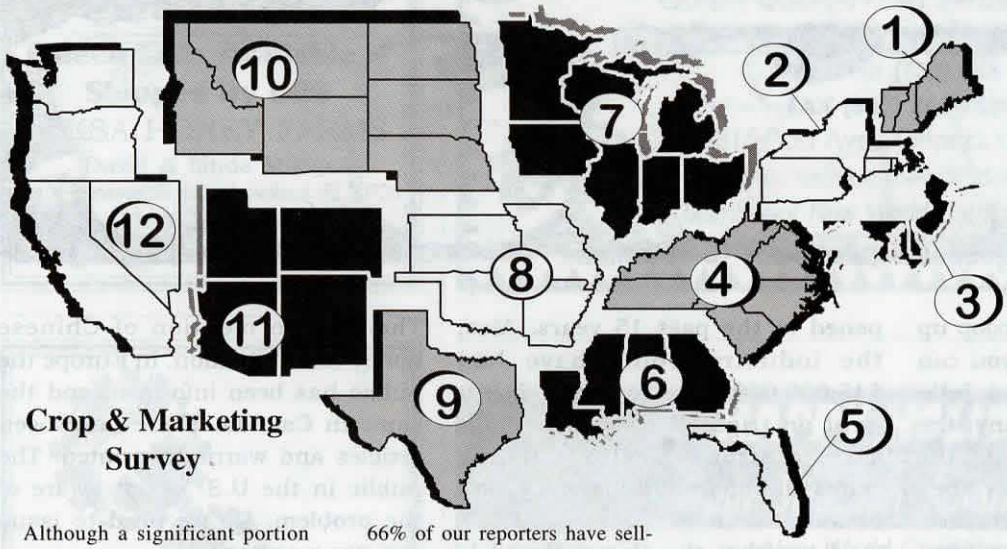
The National Honey Board's fall back position on this is that domestic honey contains many chemicals that would injure the domestic industry. What data has shown that? How much contaminated honey is shipped back to producers?

Finally, I've read that the reason the ABF won't agree with the new Packer-Importer-Producers Board is that they want to protect the domestic producer, but the domestic producers voted overwhelmingly to get rid of the Board in the last vote. Look again at the numbers. Domestic producers voted to get rid of the Board.

The current Honey Board has the potential to further divide the honey industry. If the Board is kept in its current form only further division will occur, while we keep funding it with our money. Board members will continue to fly to resorts to have their meetings and spend our money. Ask yourself, who's interest are they are protecting?

Wise Guy

DECEMBER – REGIONAL HONEY PRICE REPORT



Crop & Marketing Survey

Although a significant portion of this season's crop has already been sold, a more clear picture of production has emerged. Overall, 40% of our reporters harvested an above average crop, but a similar 40% had results just the opposite. Of those reporting a reduced crop, the average loss was 50%. The remaining 20% had an average crop this year. Hardest hit areas were regions 2, 4, 9, 11 and 12. Best were 1, 7 and 10.

Even with prices rising, 37% reported an increase in demand for this year's crop compared to last year. 53% reported steady demand (which means 90% had average or increasing demand with higher prices). Only 10% noted reduced demand so far.

66% of our reporters have selling prices higher than last year, but fully a third hasn't raised their prices yet. A small fraction has reduced prices this year, though no reason was given why.

Comparing the increased costs of medications, replacing colonies, this year's drought, labor and other business features to current sales, 40% will have a better year than last year. 36% will do the same as last year, but a quarter won't do as well.

Planning for next year, considering costs, sales and profits, 27% plan on expanding the number of colonies they operate. 57% won't change their overall colony numbers, but will replace Winter losses to keep the number the same. The remaining 16% will be downsizing next year.

14% are going to expand their product lines next season, seeking more sales and even greater profits. 81% are sitting tight, doing what they do best, and, interestingly, 5% will reduce products, but they'll be focusing on their more profitable products.

30% report increased sales so far this year, not forgetting the generally short crop has increased prices. 57% have the same, steady business as usual, while 9% have sold less so far this year. Some, about 29% ask where will honey come from this Spring?

Of those reporting reduced sales so far this year, 50% state that because they increased their prices, their customers made other purchase decisions. That decision, grounded on price, was to either go to other suppliers for less expensive product (20%) or simply reduce the honey they purchased (and thus resell) at 30%.

*Bulk sales were so uncommon this month that the numbers are meaningless. USDA AMS Honey Report figures for October indicate prices in the range of $1.00 $1.75 range, with the majority of prices in the $1.40 or so area.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12			Last	Last
Extracted honey sold bulk to Packers or Processors													**Range**	**Avg.**	**Month**	**Yr.**
Wholesale Bulk																
60# Light (retail)	83.33	86.95	99.86	73.00	99.86	80.50	95.00	83.93	105.00	102.50	96.67	84.00	73.00-105.00	90.88	81.95	70.16
60# Amber (retail)	81.50	83.64	90.00	69.50	90.15	76.50	92.33	85.00	82.50	125.00	102.50	90.15	69.50-125.00	89.06	75.44	67.61
55 gal. Light	*	*	*	*	*	*	*	*	*	*	*	*	****	*	1.29	0.67
55 gal. Amber	*	*	*	*	*	*	*	*	*	*	*	*	****	*	1.19	0.61
Wholesale - Case Lots																
1/2# 24's	33.89	29.45	47.22	34.51	47.22	29.00	40.55	47.22	47.22	37.86	25.00	47.22	25.00-47.22	38.86	30.72	30.71
1# 24's	47.37	40.30	62.27	47.56	62.27	42.00	57.08	51.00	36.36	57.72	56.50	55.80	36.36-62.27	51.35	48.28	45.04
2# 12's	40.70	38.74	42.16	46.03	42.16	38.00	43.02	42.16	44.20	51.42	47.00	48.00	38.00-51.42	43.63	43.06	39.09
12 oz. Plas. 24's	43.95	35.62	40.92	38.65	40.92	42.00	38.54	37.36	42.56	47.28	44.50	41.40	35.62-47.28	41.14	38.82	36.22
5# 6's	46.31	41.63	60.89	51.43	60.89	54.00	57.83	43.50	54.60	49.68	52.00	60.89	41.63-60.89	52.80	47.27	56.47
Retail Honey Prices																
1/2#	2.17	1.61	2.31	2.17	2.31	2.00	2.20	2.09	2.31	1.52	3.25	2.31	1.52-3.25	2.19	1.99	1.93
12 oz. Plastic	2.78	2.16	2.80	2.49	3.00	2.93	2.57	2.80	3.06	2.67	3.09	2.37	2.16-3.09	2.73	2.62	2.30
1 lb. Glass	3.08	2.96	3.37	3.01	3.00	2.83	3.14	3.19	3.23	2.79	4.00	3.22	2.79-4.00	3.15	3.18	2.89
2 lb. Glass	5.41	4.76	5.24	5.45	5.24	4.27	4.61	5.02	6.14	5.16	5.13	5.50	4.27-6.14	5.16	5.18	4.40
3 lb. Glass	7.17	7.22	7.27	7.50	7.27	8.19	6.50	7.11	8.50	7.21	6.52	8.99	6.50-8.99	7.45	7.65	6.64
4 lb. Glass	10.38	8.09	11.02	10.14	11.02	10.00	8.99	10.14	7.99	12.25	12.00	11.02	8.31-2.25	10.25	10.25	8.20
5 lb. Glass	11.79	10.74	13.49	11.32	10.00	11.00	13.69	12.99	13.49	9.28	11.45	12.99	9.28-13.69	11.85	9.90	10.14
1# Cream	3.85	3.30	4.60	3.61	4.60	3.73	3.56	3.74	5.00	4.02	6.00	3.35	3.30-6.00	4.11	4.00	3.76
1# Comb	4.31	4.32	5.27	4.60	5.27	4.25	4.23	4.25	5.27	5.00	8.00	5.00	4.23-8.00	4.98	4.93	4.58
Round Plastic	4.67	3.32	4.62	4.25	4.62	3.75	4.42	3.75	4.00	5.00	5.13	4.00	3.32-5.13	4.29	4.23	3.86
Wax (Light)	1.52	1.35	1.50	1.55	1.60	1.83	1.49	1.50	2.00	1.60	1.72	2.50	1.19-2.15	1.51	1.16	2.73
Wax (Dark)	1.64	1.60	1.30	1.43	1.23	1.50	1.23	1.23	1.00	1.23	0.95	2.00	0.95-1.95	1.78	1.03	2.13
Poll. Fee/Col.	43.75	38.50	35.00	37.50	25.00	33.50	40.00	39.55	39.55	39.55	50.00	34.00	25.00-50.00	37.99	39.05	38.35

RESEARCH REVIEWED

Explaining • Defining • Using

Steve Sheppard

"We got Varroa, and gave AFB."

The eastern honey bee, *Apis cerana*, occurs from Pakistan eastward across Asia. However, throughout much of its range, European subspecies of the western honey bee, *Apis mellifera*, have been introduced by beekeepers. The motivation to establish *A. mellifera* apiaries in *A. cerana* areas, derives from generally larger honey yields and commercial demand for *A. mellifera* hive products such as royal jelly. One well-known consequence of intermingling these two honey bee species that were previously "allopatric" (they did not occur together within their natural ranges), was the host shift of the *A. cerana* parasite *Varroa destructor* to *Apis mellifera*. When infested *Apis mellifera* was moved back to the west – the newly acquired mite moved along and changed beekeeping, as we knew it, forever. However, the street ran both directions and American foulbrood from the western honey bee was subsequently reported in populations of *A cerana* from India and New Guinea. While *A. mellifera* maintained in Asia is usually treated to prevent AFB, the actual occurrence of the disease in *A. cerana* populations appears to be reasonably low. Recently, researchers from Taiwan have studied the susceptibility of *A. cerana* to the causative agent of AFB, *Paenibacillus larvae*, and reported that one of the primary resistance mechanisms may be quite similar to that known from the western honey bee, namely hygienic behavior (Chen et al 2000).

The researchers prepared a solution of AFB spores from infested scales (remains of previously AFB-infested bee larvae). The control stock solution contained the same material but with spores that were inactivated by treatment with formaldehyde. The first set of experiments consisted of inoculating groups of 120 one-day old *A. cerana* larvae with various dilutions of the spore suspension. The comb locations of the inoculated larvae were recorded on transparent film overlays. The combs were returned to the colonies until the cells were capped and then moved to an incubator until 15 days after egg hatching. The researchers measured capping rates and the proportion of capped larvae that exhibited signs of AFB at day 15. Another set of experiments involved directly injecting the spore solution into both *A. cerana* and *A. mellifera* pupae and placing them in an incubator. The pupae were examined 10 days post injection for signs of AFB. To test hygienic behavior – larvae and pupae of both *A. mellifera* and *A. cerana* were inoculated and returned to their colonies. The comb locations were marked using transparent overlays as before.

The results of the spore inoculation experiments showed that some of the *A. cerana* (5-19%) exhibited AFB symptoms at the spore concentrations that were tested but that many inoculated larvae were removed from the combs by the adult bees before they were capped (15-59%). The results of the direct injection experiment showed that *A. cerana* was highly susceptible to the disease organism. At high doses, all pupae developed AFB and even at the low dosage, 60% of the bees exhibited AFB symptoms. The results for *A. mellifera* were very similar for this experiment. Hygienic behavior toward larvae differed between the two species, with *A. cerana* removing 82% of the larvae inoculated at day one and *A. mellifera* removing 32% of same aged larvae. However, the removal of pupae after spore inoculation was reversed, with 95% of the capped larvae removed by *A. mellifera* and 33% removed by *A. cerana*. However, the authors noted pupae that were not removed were healthy in both cases.

The authors concluded that *A. cerana* is indeed susceptible to AFB, although larval age was a key factor in whether the disease would be contracted. Thus, larvae that were more than one day old at the time of inoculation were highly resistant to becoming infected with AFB, even at the higher spore loads tested. In addition, 82% of spore-inoculated *A. cerana* larvae were removed by adult workers prior to capping. The authors conclude that another important factor in AFB resistance by *A. cerana* was the effect that removing larvae had in decreasing the spore levels within the hive. Interestingly, in experiments conducted by Marla Spivak at the University of Minnesota, selection for hygienic behavior in *A. mellifera* also conferred a measurable degree of resistance to AFB.

The importance of evaluating innate mechanisms of honey bees themselves for resistance to AFB is quite easy to understand. In the U.S., AFB was controlled for a number of years by prophylactic use of antibiotics, particularly oxytetracycline (OTC). More recently, the development of OTC-resistant strains of AFB has created a problem for some U.S. beekeepers, motivating government research and regulatory agencies to seek registrations for additional antibiotics for therapeutic use. The recognition that AFB bacteria will continue to evolve resistance to new antibiotics suggests other avenues to maintain colony health should be exploited, especially those that minimize further chemical and drug exposure. BC

Reference

Chen, Y., C. Wang, J. An and K. Ho. 2000. Susceptibility of the Asian honey bee, *Apis cerana*, to American foulbrood, *Paenibacillus larvae larvae*. J. Apic. Res. 39:169-175.

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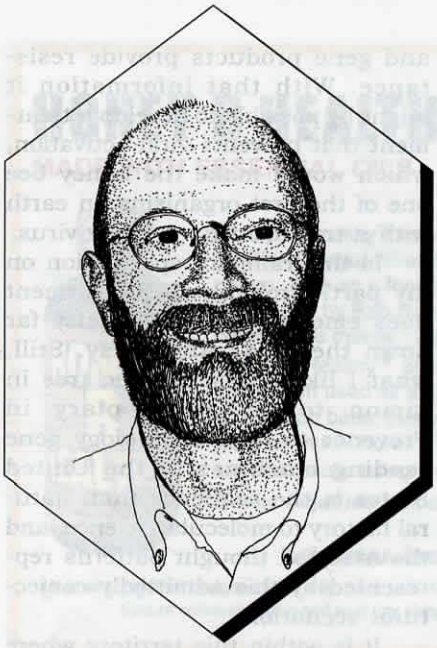


Mark Winston

Science, French Style

"With its feet in the furrows, and its mind soaring through the heavens - this is where the best science gets done."

If archaeologists ever seriously decide to search for the mythical Garden of Eden, I can save them quite a bit of time. I suggest they start looking in southern France, a part of the globe that must be descended from paradise.

The ancestral Eden would have had a warm climate, scenic beauty, and most importantly a cornucopia of crops and edible wild vegetation to fill every shade of the food palate. Such a place exists on earth today, in Provence, France. More specifically, it can be found in the few kilometers surrounding the small village of Le Thor, outside of Avignon, where I recently had the pleasure of spending a few days with one of France's most eminent bee scientists, Yves Leconte.

In fact, I think I know the exact spot where our contemporary earth reaches Eden-like perfection. Yves took me to the vineyard that he rents with ten friends, and from which they produce a table wine that I can vouch for as top-grade. Within view of the vineyard was the richest concentration of produced crops and collectible wild food I had ever seen.

Beside the grapes was a newly planted row of green oak trees that will begin yielding highly prized truffles in about 10 years, adjacent fields of pumpkins, sunflowers, and corn, wild blackberries, prunes, figs, and blueberries, and even an abandoned apple orchard. All of this was a few fields over from one of Yves' apiaries that housed colonies of bees that may be the most remarkable aspect of this utopian tableau.

Visiting with Yves is a quintessential French experience, marked by long meals carefully prepared and slowly eaten, savored with wine and spiced by rich conversation. Our talks rambled through the meaning of life, careful dissection of the pluses and minuses of the bread and croissants from each of the five bakeries in Le Thor, and gentle gossip about the neighbors, their pets, and the local characters.

We also talked bees, in the romanticized style that is one of the hallmark characteristics of French science. Gradually the story of his Le Thor apiary emerged, a research tale about some of the work that Yves is conducting today that highlights some of the differences between North American and European scientific cultures, and also holds some promise for a long-term solution to the problem of *Varroa*.

Yves' bees did not come from Provence, but from his family's ancestral land near Limon in northwestern France that has been lived on and farmed by an unbroken line of Lecontes for the last 800 years. Yves, his wife, and his children return home every August, a sacrosanct month when all self-respecting French citizens take holidays.

It was on one such trip back to the family farm that Leconte noticed a few colonies of wild bees that had persisted in large trees shading the drive leading into their ancient farmhouse. This immediately struck him as unusual, because almost all feral colonies had disappeared in France because of *Varroa*.

He at first assumed these colonies were new swarms but noted their location, and became more interested over the next few years as the bee trees remained inhabited and untreated managed colonies nearby also persisted. Yves and his students decided to move some of the colonies to their apiaries near Le Thor and began studying the bees' apparently natural resistance to varroa.

Leconte is Research Director of a laboratory at INRA, the French government institution that is roughly the equivalent of the U.S. Department of Agriculture. However, INRA has a considerably broader philosophy about agricultural research than the more application-oriented USDA, which tends towards mechanistic research designed to solve problems without necessarily understanding their fundamental basis.

In contrast, INRA and other European government research organizations encourage their scientists to maintain a fuller range of basic and applied research, and to investigate the underlying causes of pest and disease problems before launching into research for solutions. The difference is this: North American agricultural departments tend to do research throwing an array of compounds at new pests first, hoping something works. Then, if there's time available and money left over in the budget, they may try to figure out why a treatment was successful.

Continued on Next Page

"This interest in viruses presents another difference in the approach that European and North American bee scientists have taken towards *Varroa*."

The approach is reversed in European government laboratories. Federal scientists first investigate the biology and weaknesses of their country's agricultural pests, then attempt to develop responses.

This broad strategic approach coupled with excellent facilities and resources represents a significant difference between government-managed science in Europe and North America. As a result, Leconte's laboratory has been able to investigate the constitutive mechanisms behind *Varroa* resistance in addition to breeding queens that could one day be useful for colony management.

One focus of Leconte's research has been to analyze colony traits that could explain how his untreated bees survive a *Varroa* infestation. Hygienic behavior is one such trait, in which worker bees have a higher probability of removing an infested pupa than non-hygienic bees. Another possibility is cell size, in which bees developing in smaller-than-average cells emerge a day or two earlier than bees from large cells, and thus the mites do not have sufficient time to reach maturity. A third trait could be resistance to tracheal mites, since infestation by tracheal mites dramatically compounds the impact of *Varroa*.

Any or all of these traits can contribute to resistance, but Leconte's research suggests that these factors alone or together are not sufficient to explain why his colonies survive indefinitely without treatment. Yves' intuition is leading his laboratory in another direction, towards viruses.

This interest in viruses presents another difference in the approach that European and North American bee scientists have taken towards *Varroa*. Here in the New World, the interaction between *Varroa* and bee viruses has been largely ignored. Our attitude has been that since no chemical or antibiotic treatments are available against any virus, why focus on the role *Varroa* may have in activating bee viruses?

Two British researchers have taken a different approach, one that is influencing the direction Leconte is taking his investigations. Brenda Ball and Stephen Martin conducted a fascinating study in England in which they compared *Varroa* -infested colonies that collapsed with those that survived for one year.

Surveys from both the surviving and the dying colonies indicated that *Varroa* levels were high, sometimes upwards of 20,000 mites per colony. The difference between survival and mortality was that viruses had been activated in virtually all of the declining colonies, but bees from the still-healthy colonies showed little or no viral activity. Their hypothesis was that there is a protein released when *Varroa* feeds that activates dormant viruses in the susceptible bees but not in the healthy group.

They, and Leconte, propose that resistance to *Varroa* may involve the ability of some bees to block the activating substance and thus prevent the viral outbreak that seems to be the real cause of *Varroa*-induced death. While it's true that understanding this mechanism may not lead to a treatment, it may well lead to improved selection criteria to develop a *Varroa*-resistant line of bees, an exciting objective that so far has eluded the more traditional selection approaches that have been attempted around the globe.

There is another potential twist to this viral story that may put bees in the forefront of research attempting to develop treatments for viral infections. Yves has collaborated for many years with Gene Robinson, a researcher at the University of Illinois who recently and successfully spearheaded a campaign for funding to sequence the entire genome of the honey bee.

Once complete, knowledge of the structure of every bee gene would allow comparisons between susceptible and resistant stock, and determination of which genes and gene products provide resistance. With that information it might be possible to develop a treatment that prevents viral activation, which would make the honey bee one of the first organisms on earth with a treatment for a nasty virus.

Is this rampant speculation on my part? Probably. If a treatment does emerge, is it still pretty far down the road? Absolutely. Still, what I like about the bee tree in Limon to research apiary in Provence to high technology gene reading machines in the United States is the sequence from natural history to molecular science, and the assorted thought patterns represented by this admittedly conjectural scenario.

It is within this territory where multifaceted approaches intersect that our highest potential as scientists can be achieved. The seamless merger of basic and applied, fundamental and practical, observational and experimental, field and laboratory, this is the dominion where the finest science transpires.

It is also where the solutions to *Varroa* will develop. Hygienic bees that are resistant to both tracheal mites and activation of viruses by *Varroa*, perhaps in colonies founded on foundation with smallish cell sizes, combined with occasional miticide applications and the to-be-developed viral treatments, this is my blue-sky version of how *Varroa* will become inconsequential.

My prediction: I'll be sitting around Yves' table and eating some of his first truffles in 2012, reminiscing about the tough years when *Varroa* was a problem. We'll be sipping his 2011 vintage of wine, and continuing our argument about which Le Thor bakery has the crustiest bread.

Soon, though, our conversation will turn to science, and we'll meander from speculating about solutions to the next decade's practical beekeeping problems to pondering the mental abyss where the illusive and profound meaning of life resides.

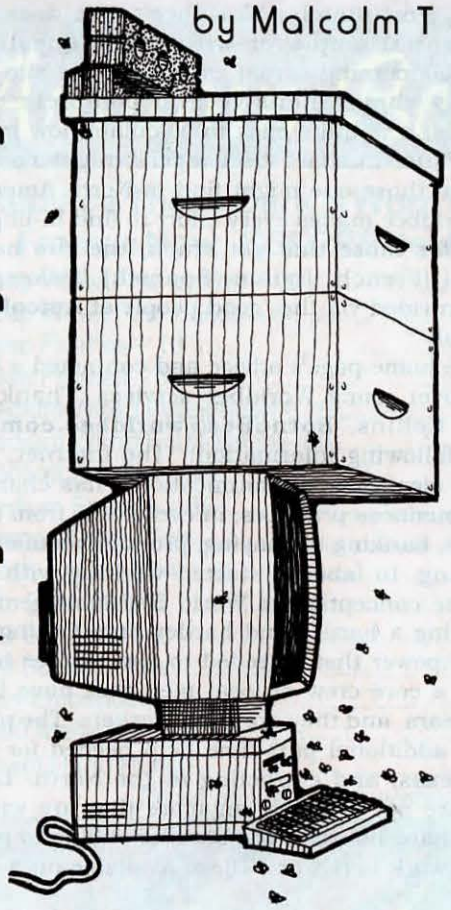
That, after all, is where the best science gets done, with its feet in the furrows and its mind soaring through the heavens. BC

Mark Winston is a Professor at Simon Fraser University, Burnaby, B.C.

Beekeeping In The Digital Age

by Malcolm T Sanford

A "Virtual" Labor Of Love



One of the reasons that beekeeping is so prized as an economic development tool is that it is "labor intensive." That's economic-speak for hard, manual, often unpleasant work. In the past, it was often difficult to find persons who had two attributes extremely important to beekeeper employers: 1) experience and 2) a willingness to relocate on demand. Another labor criterion was that it was seasonal; there was only work and money to pay wages at certain times of the year. Because of the first two items mentioned above, however, employers were often forced to hire laborers for a full year, reducing their profit margin.

Although employers who were hard put to find experienced employees that would work part time were common in the past, this is less of a problem nowadays. A large temporary labor market exists and is growing. These workers are called "temps." Many agencies exist to match up employers with temps. For example **Able Body Temporary Services** is a family-owned and operated business that does much of its work using the Internet. Beginning with only a single branch in Largo, Florida, Able Body now has over 50 locations throughout Alabama, Delaware, Florida, Georgia, Kentucky, Mississippi, New York, North Carolina, South Carolina, Tennessee, and Virginia. The company strives to maintain the power, skill, and resources necessary to succeed in the service industry. Although focusing on supplying temporary workers, the vision is "broad." **Agile•1** offers an associated service, a collaborative best-of-breed "solution" for human capital management. This is a software package, the result of the digital age, that allows managers to track usage, performance, and trends with regard to temporary staffing practices.

Nicole Bishop writing for **Inc.com** advocates virtual workers, another digital age concept. "In this tech-starved economy, it makes sense to hire people who can work for you via the Net." The advantages are numerous. Money can be saved by hiring someone in another geographic area. Not only may labor be cheaper, but foreign exchange rates could mean a higher priced worker for a discounted price. There are freelance work exchanges. For example, **freelance.com** enables a potential employer to post project outlines and obtain bids on pricing from service providers (temporary employees) from all over the country or the world. Several databases exist of experts who also place their resumes online. One is **Prosavvy**. **Guru.com** allows job seekers to search by location. Other sites that offer similar services are **smarterwork.com**, and perhaps the most recognizable, **monster.com**, which even was a major sponsor of the Super Bowl some years back, when the so-called "dot coms" spent large amounts of money on advertising.

If you are a worker, there are also resources to help you see what jobs you might be fit to tackle. The **fitability** home page asks you to fill out a questionnaire to be used to help choose a suitable job or career, or simply to aid in personal development. Applicants are compared on five scales: work, social, tact, stress and interest. They receive a clear, concise interpretation for each trait. The profile is then used to check how much of a "fit" one is for various jobs by comparing one with people who are already effective in specific occupations. This information is drawn from a database of over 130,000 employees. A variation of this is offered by **ZERORISK Hiring System**, a "unique, state-of-the-art business tool to assist recruiters, human resource professionals, department managers, and executives in becoming better interviewers and significantly reducing hiring risks to the lowest possible level. By combining an objective assessment of each candidate designed to evaluate 'thinking' competencies (**Kinsel-Hartman Profile**), with the discipline of behavior-description interviewing, each person involved in the interviewing and selection process will have a proven guide to match the candidate with the job/role requirements, their manager's style, and the corporate culture. The profile can be administered and scored via the Internet, and results are e-mailed instantly."

There are also providers, which accomplish what many "human resources" departments are set up for in businesses. For example, **Labor Ready** will order any number of workers for any number of hours. It contracts to deliver dependable temporary workers to your site; pay the workers after each shift; pay and file worker's compensation, unemployment; FICA, federal and state taxes, as well as pay for advertising and other hiring costs.

Continued on Next Page

DIGITAL ... Cont. From Pg. 25

Given all this activity, it was only a matter of time before a beekeeping-specific labor management organization was formed. This is **Worldbee.com**. On the home page one sees the following message: "You're in the right place if you are looking for labor solutions. We've been working with 'U.S. Commercial Beekeepers' since 1997, offering innovative & economically viable alternatives to their labor shortages. We have the experience and manpower to go to work for your outfit. We can reduce your overall labor costs and we can get to your operation quickly. Effective utilization of the 'Internet' as a way of communicating with the 'Beekeeping Community' in general and 'Our Clients' specifically, is essential to the overall usefulness of the service we offer our clients, employees, partners and visitors alike."

The central concept of Worldbee is to provide JIT (just-in-time) labor. That is similar to the way most businesses now function. Everything from automobile parts to now labor is delivered right when it is needed. This is a two-edged sword, however, for it makes for little flexibility in the system, if one part breaks down. This is what happens when natural disasters (hurricanes for example) hit and supplies run out as the "just-in-time" trucks cannot reach the scene. Witness the recent long shore man's strike on the California coast, where the failure to get parts offloaded from container ships shut down some assembly lines, resulting in the President considering the **Taft-Hartely Law**.

For beekeeping, where would a "just-in-time" labor pool be available? You guessed it: Argentina, the country that exports honey to the U.S. will now also provide a share of the labor for U.S. beekeepers. Thus, Worldbee visited San Francisco de Cordoba in the "Plate Republic" and its Beekeepers Exhibition from May 17 through 19, 2002. It found 14 qualified beekeepers available from June 15th through Nov 15, 2002, just in time for honey pulling and extracting. Another country where beekeepers are being located is Nicaragua. My guess is Mexico soon will also be on the list. Beekeepers also are generally available to return year after year, so a constant labor supply is envisioned by Worldbee. The company also does most of the "human resources," and "immigration" work for employers. The outfit ensures that workers are legal, have the proper paperwork, and it also pays them directly, avoiding some of the recently reported scandals concerning payment of domestic, foreign workers. Worldbee uses the Internet payment system called **PayPal®**, which is worth another column in this series. Suffice it to say that buyers and sellers must have PayPal® accounts, and money can then easily be transferred between them.

Specific fees charged by Worldbee include round-trip airfare, and a pre-arrival fee of $350.00, which is non-refundable and payable prior to arrival of beekeeper. There is a placement fee of $500.00 and a monthly fee of $1600.00 per beekeeper. The latter includes services such as automatic payroll and monthly administration. Additional costs may vary, depending on unemployment insurance and workman's compensation rules and regulations. Fortunately, Worldbee's site does not leave a potential employer with many questions unanswered concerning actual expenses. The site has a reasonably comprehensive and complete cost analysis. Thus, it is quite easy to calculate how much one to four "just-in-time" beekeepers might cost in comparison to those one might find in North America. Although Worldbee makes every effort to find bi-lingual beekeepers, for those that get stuck, the site has a multi-lingual (French, Italian, Spansih) beekeeping dictionary, provided via the "good people at **Apicoltura** on line in Italy."

I took the home page's advice and contacted a beekeeper-employer using Worldbee services. Thanks to Mr. Donald Collins, **BotnoBee@worldbee.com** for sharing the following information: "The internet, and revolution in electronic communications, has changed many of my business practices, in everything from telephone service, banking bill paying, product acquisition, travel planning, to labor. I started working with Mr. Gray from the conception of World Bee Management, as I was having a harder and harder time finding the qualified manpower that I needed to run my bee business. I have a core crew of local men that have been with me for years, and they are great workers. The problem was the additional part time help needed for nuc making in Texas, and extracting in the North. Local people just are not available anymore that are willing to work long hard hours in the bees, or willing to move to where the work is (TX or ND), or available on a part time basis.

"That is where Worldbee came in. Mr. Gray's idea was to build a company to meet that need. After four years of working with Worldbee, my company is structured labor wise around the use of their services. I now contract for workers that arrive in Texas or ND when I need them. I get the same workers each year mostly, so there is no training curve, and they are hard working experienced beekeepers in their own country.

"How does all this relate to the internet? Worldbee is an internet oriented company that only came into existence as the internet evolved, and made it possible. Mr. Gray is a resident of Costa Rica, and runs the business from his offices there. Billing is done by e-mail (can be paid through Paypal®), paychecks are now being deposited directly to workers accounts, Workers are provided with calling cards from "**Enlina**", an internet based communications company.

"In short, Worldbee is a company built around the 'electronic revolution,' and I found the site at **http://www.worldbee.com** while using the internet, and solved the biggest headache of my business, labor procurement. I would expect this type of contract labor service to expand in many other areas as U.S. workers continue to move more and more into a service and technology oriented economy." As noted elsewhere in this article, Mr. Collins' prediction is coming truer each day as the digital age continues to mature. BC

Dr. Sanford is former Extension Specialist is Apiculture, University of Florida. He publishes the APIS newsletter: ***http://apis.shorturl.com***

Night moves are the Dark Side of moving bees: Come over to the light

DAY JOB

Most recommendations for moving bees suggest that nighttime is the right time, when it comes to moving bees. I've moved thousands of hives at every imaginable hour of day and night, using everything from a car trunk and roof racks to a semi-trailer and – given a choice – I prefer moving bees when I can see well, when temperatures are coolest, and during my normal waking hours. For me, early morning is best

Allen Dick

The traditional time for moving bees is during hours of darkness. There are many good reasons to choose late evening or nighttime to move hives, and, true enough, in some ways, night is best. By nightfall, almost all the bees come home, and, if all goes well, few bees will be left behind at the old location.

Since forager bees tend to come and go on a fairly fixed daytime schedule, and rest at night, they are much less apt to fly out and get lost during a night move than if their hives are moved carelessly during the day. In a night move, any bees that come out during transport will be reluctant to fly far and therefore won't sting innocent bystanders a hundred feet away or more. Under cover of darkness, a beekeeper's activities may also draw less attention in a busy neighbourhood. With a full moon on a clear night, and with happy bees, things can go very well and the experience can leave lasting memories of a landscape bathed in silver moonlight, the smell of the smoker, and bees humming contentedly in their hives, while being loaded in the cool night air for a trip to a new home somewhere down a picturesque country road.

One the other hand, moves at night can have problems, and some of those problems can be serious enough to make a daytime move worth considering. At night, it's not only the bees that have problems navigating; beekeepers have trouble seeing badger holes, stones, and other ankle-twisting hazards under foot, particularly if there is no moon or if the chosen night becomes overcast. Skunks, snakes, bears and other nocturnal foragers may be encountered out in the darkness, to the surprise of all concerned. Even one hive dropped in the dark can quickly turn into a disastrous mess of oozing honey and broken comb covered with crawling, stinging, lost bees. Tying knots and fastening straps, especially when wearing gloves, can be difficult in total darkness.

In the dark, bees that escape from hives being loaded don't fly far. Instead, they crawl all over everything, and – rather than fly – tend to cluster and fall to the ground in bunches. Lost bees on the ground sting the ankles of passing beekeepers carrying heavy hives or pushing hand trucks. Crawling bees move relentlessly upwards, and can magically discover even the smallest openings in bee suits and veils – like rips in new white coveralls

from a barbed-wire fence hidden by weeds in the dark.

Lights, unless covered with a red lens[1] will encourage guard bees to fly. Any unfiltered light will and attract kamikaze bees in hordes, and although bees cannot navigate well by flashlight, they can navigate well enough to find you, if you are holding it.[2]

Smoke doesn't seem to work nearly as well at night as it does in the daytime, and a strong hive, especially one that is picked up during a good honey flow, may be unexpectedly hard to handle. Bees will spill out of any opening and – lacking enough light for flight – crawl all over everything nearby, including the beekeeper, then cluster on his veil. These lost, crawling bees may not be particularly vicious, but the crawling and buzzing can be distracting, to say the least. On top of that, any bees that get pinched in the action will – predictably enough – sting – often right through a suit. Wearing a hot, damp suit that buzzes sporadically, being stung at random in the dark, and feeling lost somewhere out in strange country in pouring rain at an hour when sensible people are home, asleep, is more than many of us can bear for long. I've watched better beekeepers than me go running off into a nearby crop in the moonlight, tearing off veils and clothing, and shouting at the top of their lungs, or weeping.

Of course, many beekeepers seal up the hives with screens before the move. This idea works best in theory, and can inspire false confidence, but – assuming the job is done well, and assuming again that no hive comes apart, even a little bit, or gets dropped during the move – this strategy can be very successful, especially when only a hive or two must be moved. The idea becomes less and less practical as the hives to be moved become larger and more numerous. A serious downside to this approach is that it is entirely possible to smother and kill a strong hive by screening it, since the bees inside – and any hitch-hiker bees that are around – can choke every square inch of screen and cause a full blown bee panic, driving the hive interior temperatures to the lethal range in an instant. Moreover, these screens must eventually be removed when the move is complete, and that may not be a pleasant way to end the night.

Roads that are familiar in daytime look different at night, and getting into a new location may be more difficult than expected. Sometimes gates are locked at sundown, and, in extreme remote areas, armed vigilantes may even be on the lookout for suspicious activities and mistake *you* for their quarry. Of course their quarry may be out there somewhere in the dark too, and that is a sobering thought.

Badger holes, ruts, rocks and bogs along a farmer's trail that are easy to spot and avoid in the daytime are less obvious in the bouncing beam of truck headlights. Hazards like these can jumble loads, trap vehicles and cause breakdowns or delays at a time of night when help can be hard or impossible to find. Lights and noise after midnight may draw attention from neighbours, and even bring the police.

Riding in the vehicle between locations or on the way home at night may not be much fun either, since loose bees will ride on the beekeepers' clothing and crawl around inside the cab, buzzing loudly and intermittently, getting crushed and seeking shelter down necks and up cuffs, rather than flying directly to windows and out, as they readily do in daylight. Most people are not at their best late at night, even without bees crawling around inside their clothing. Crawling, buzzing, stinging bees can be a serious and dangerous, even fatal, distraction for the driver.

If things don't go well, working at 2 AM and beyond can be very challenging. Getting up and going to work the next morning, stung, swollen, and still weary, may be an even greater challenge.

Daytime moves have their problems, too, but lost, crawling bees is generally not one of them. Bees prefer flying over crawling and, in daytime, if they can see and recognise their hive, most bees will eventually go back in if the entrance is left open, and a fully open entrance is always my preference. Smoke works reasonably well too, during the day, and with a little smoke applied judiciously into entrances before loading, and then again over the entire load while sitting, and again before driving away, most bees either find a hive or just go away – unless they are held in by a bee net.

I don't like nets. Day or night, nets hold in and frustrate bees, smoke or no smoke. By the time a net is removed at the destination, assuming the weather is warm, quite a few bees have become angry and have only one purpose in mind. That goal is to sting a beekeeper, and to sting as hard as possible. Taking off a net isn't much fun – or can be lots of fun – depending on how you look at it, and on who gets

[1]Replacement trailer taillight lenses available at auto supply stores can be taped onto a flashlight or other light source.This works well to make any white light source invisible to bees, but still bright enough to be veryhelpful for the beekeeper. If you use the truck battery to power your light, make sure you don't run it flat or you can't start your truck.

[2]Don't hold an unfiltered flashlight in your hand near an open hive at night or work near any unfiltered light. Place any white light source a distance away from where you expect to be working and aim it towards where you will need light.

Continued on Next Page

DAY JOB ... Cont. From Pg. 29

the job[3]. I have nets, but I don't normally use them. Most of my moves are short moves of less than 150 miles or so, take place in early morning before the bees are flying, and are in unpopulated areas.

I do use tarps, though. Tarps provide shade and in that semi-darkness, early in the day, bees stay in nicely, with a minimum of smoke, as long as there is sufficient air available. Tarps, or nets keep all the assorted parts of a load of hives from squirming loose and falling onto the road. For small loads, a tarp or net and its ropes or straps may be all you need to keep the load on, especially for short moves down quiet country roads[4].

Of course, nets are necessary – mandatory even – for any load where bees might escape on any long move, especially where people are likely to be encountered along the way or on any trip where stops are planned – or possible. If in doubt, be aware of regulations in your area and use a net (and/or tarp) even if your hives are screened. Heavy-duty commercial bee nets can be found advertised in bee magazines. Alternately, shade cloth, a net-like material used for shading sensitive plants, is available cheaply at greenhouse supply stores. It works fine for casual use.

If in doubt about moving in daytime with open entrances, just ask the bees if it's okay. The bees will tell you if there will be a problem or not. Here's how.

When contemplating a move, simply smoke one or two hives gently in the entrance(s) several times at one-minute intervals and then move the hive(s) a few feet. If any bees that come out just fly a bit and go right back into the hive, or follow the hive wherever you move it, then you can probably move the whole yard of bees without any special precautions beyond a light smoking, but be observant.

Bees lose their sense of hive location quite quickly if they are not foraging daily. Unless there is a honey flow on, they will usually follow and stay with their hive when it is taken away. A little smoke is all that is necessary to keep them in the hives and unless the weather turns hot and sunny, they will usually stay in quite well once underway.

During the cool times of year, when there is no flow on, and on rainy days, bees can usually be moved freely with open entrances on an open truck or trailer at any time of day, as long as most bees seem content to stay in their hives. When moving hives to wintering yards in the fall, we are able to move bees all day long most days without losing bees. In the spring, we move hives out on rainy days and find that the bees are happy to stay in. At such times, we can haul open hives all day, without harm to the colonies.

When moving large, active hives during a honey flow, however, things are very different. If the drive is to be a long one, we load at dusk to save the early morning hours for driving. The load sits on the truck overnight, and we rise at dawn to deliver the load during the cool hours. Otherwise, for short trips, we rise early, arrive at the yard just before sunrise, smoke the bees a bit, load them, and deliver them before the heat of the day

In Alberta, midsummer days measure over 17 hours from sunrise to sunset, and there are a few limited hours when we have enough light to see, when temperatures are still relatively cool, and when it is still too early for the bees to try to forage. Once the sun comes up, the days get very hot, fast. We figure 9:00 a.m. is as late as we care to unload. Eight is better. By nine, the sun is high in the sky and the bees' alarm clock tells them to get to work in the fields. By nine, they become hard to keep in the hives, but at daybreak — when they have finished ripening the previous day's nectar and settled down, but are not yet foraging — they are as calm as they will be all day.

No matter when you do a move, day or night, you'll have to decide whether a catch hive is warranted, since it means a trip back later to collect it. Oftentimes as you are loading you can see that virtually no bees are staying behind. You can see that the flying bees find the hives on the truck and go inside, perhaps with the help of a little smoke. That is ideal, but if any number of bees is seen flying or landing around the yard, leaving a catch hive behind to collect the stragglers is advisable.

No matter when you move hives in summer, there are usually a few bees that have stayed out overnight and which will return in the morning. Add these to any that you lose while loading and you could have a situation on your hands the next day if the owner of the landowner is sensitive to lost bees circling their former hive location. Any small hive – or even a super left in the area where the hives were sitting – will do, but if you have a weak hive or a nuc, this is a good chance to build it up quickly. Add an extra box and leave it in the middle of the former bee yard.

If many bees are left behind, a full hive – or more – may be needed, but then maybe you've misjudged the situation and you really shouldn't be moving at this particular moment. If there is a strong flow on, flying bees *will* return in numbers to each original hive location while you are loading, and a different approach is necessary. The same hives can still be moved in daylight, but either the hives must all be smoked gently, but thoroughly and repeatedly until they stop flying and the foragers return. – a matter of 20 to 30 minutes minimum – then loaded, or a retreat must be made and an earlier start arranged for the next day.

Some beekeepers use closed vans or trailers like the ones U-Haul offers (often with added ventilation). This makes the job very easy since, once the bees are loaded, they are in complete darkness for the trip and there is no danger of escape. Nonetheless, we use flat bed trucks since they are versatile and loading off the side and back is easy — and that is what we happen to have. With tarps, the effect is similar.

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[3]Although the bees waiting on the inside of the net when arriving at the destination are bound to be vicious, if the move was done properly, there aren't usually a great number of them. Most are just cranky old bees, so they are little loss if they are allowed to fly free and to return – or not – rather than being trapped under a net. For local moves, we don't try to restrain them.

[4]Never trust rubber tarp straps to hold a load. We see enough perfectly good bungies scattered here and there along any road toknow that they are not reliable for that purpose. They are for taking the slack out of a tarp, not securing loads.

In this as most beekeeping matters, the usual disclaimers apply. Although this article can provide ideas, each region is different. Experiment and observe. Check your local regulations and obey the laws. With any luck, moving bees will become a much more pleasant task and you can sleep nights. BC

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

Making SUPER SUPERS

Peter Sieling

Making new equipment is a pleasant and potentially profitable way to spend Winter evenings and weekends in the wood shop. If you enjoy woodworking, have access to reasonably priced lumber, can devise jigs to reduce setup time, and make multiple parts at once, homemade supers can be less expensive and probably better than those available from commercial outfits.

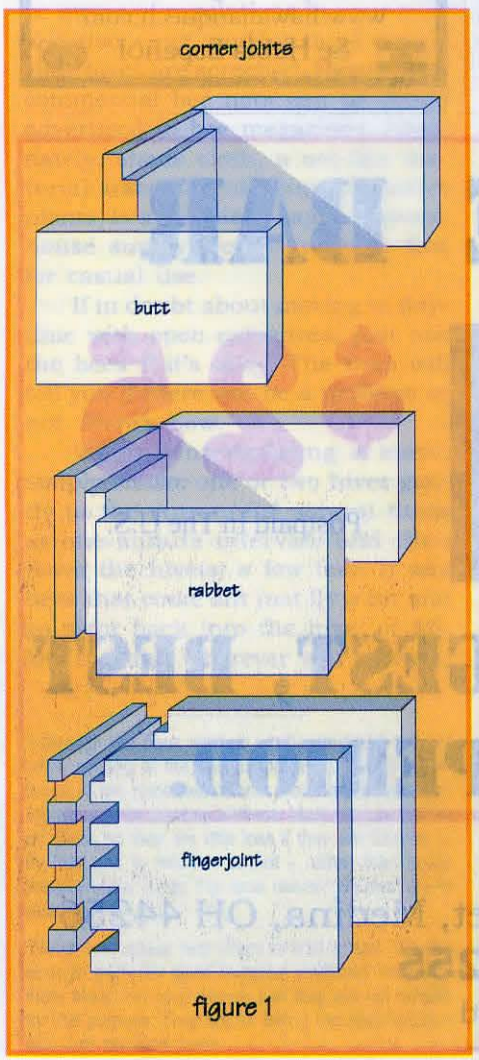


figure 1

Standard Dimensions

Finding the perfect dimensions for hive bodies and supers proved more elusive than I expected. Equipment from commercial manufacturers is similar but not identical. I measured deep supers ranging from 9-1/2" to 9-5/8", with lengths from 19-3/4" to 20". These sizes create a bee space of 1/4" to 3/8" with a 17-3/4" long frame. Some of my frames measured 17-5/8" long. Frame depths ranged from 9-1/4" to 9-3/16".

Plans in publications and online vary just as much. I found dimensions in some plans that result in a bee space of half an inch. In the end I measured a couple dozen frames and worked out the dimensions from the most common frame size. If you plan to make a few hive parts or if you want to make all your equipment, the dimensions presented stay as close to medium sizes as possible to minimize problems when mixing with other equipment. If you already own perfectly good equipment from a particular company, consider altering the dimensions to fit your current equipment more closely (see sidebar). A nice long-term goal is to cull the odd

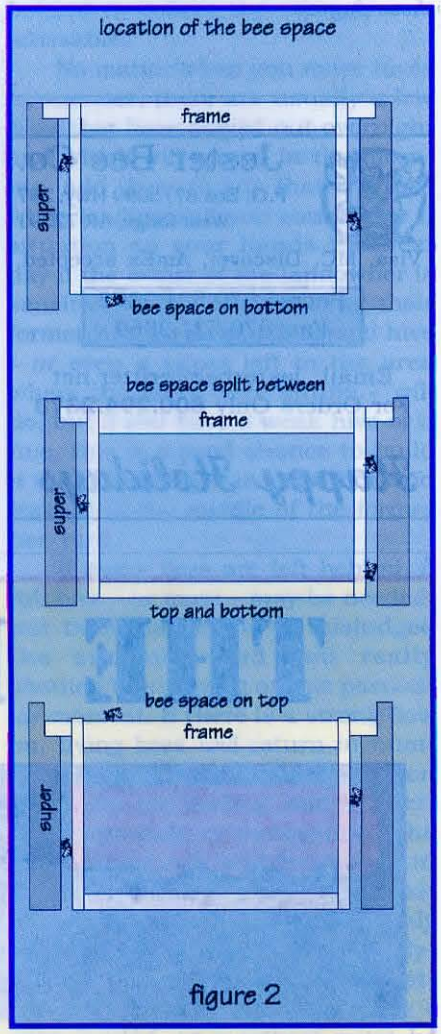


figure 2

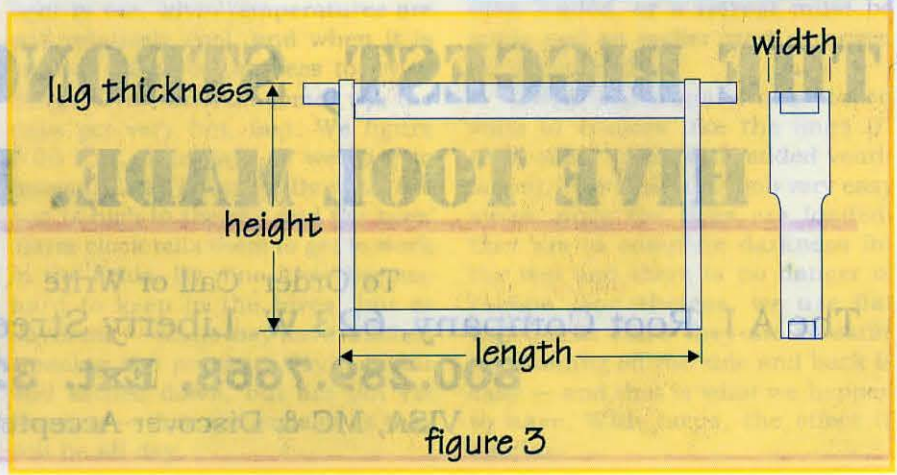
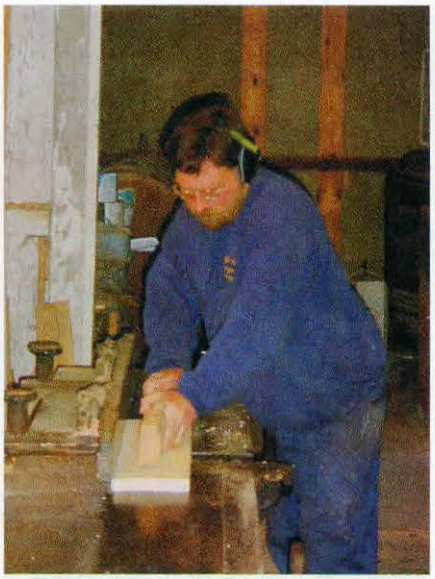
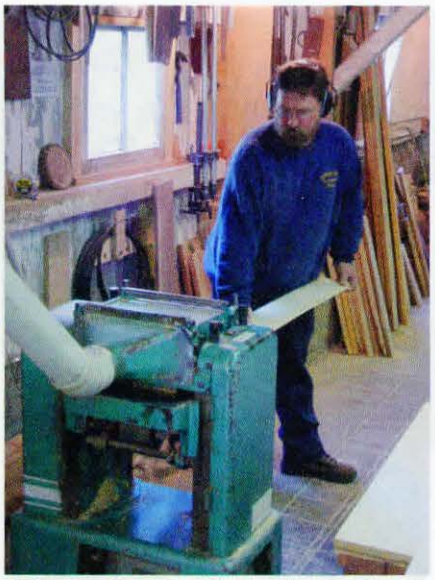


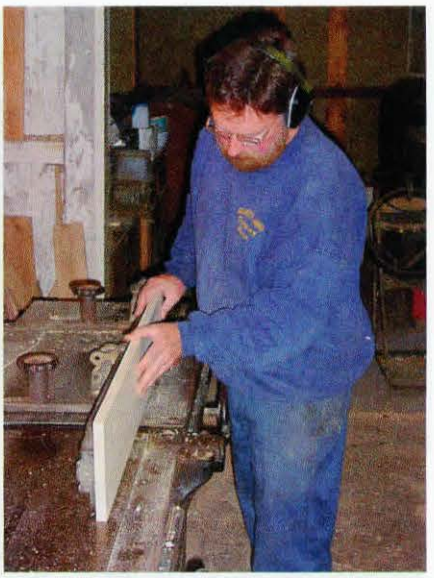
figure 3



All lumber warps to some extent during drying. Face jointing flattens lumber, making it easier to work with.



With one face flat, the lumber is planed to 3/4"



Edge jointing straightens the edges of the lumber prior to gluing and provides a smooth edge for the supers' edges.

sized pieces while making or buying identical and fully interchangeable equipment.

Lumber

It is more efficient to make several supers at a time. The setup time is the same whether you make one or fifty. Allowing for some waste, it takes approximately six board feet (BF) of lumber for a full depth super, four BF for a medium super and three BF per shallow super.

Lumber species that work well for supers should be inexpensive and soft enough to nail easily. Suitable woods include white and sugar pine, cypress, cedar, yellow poplar, basswood and aspen. Lumber is expensive to ship so local species will tend to be less expensive. Use thoroughly air dried or kiln dried lumber. Green or partly air dried lumber can shrink as much as half an inch in width on a deep super and may warp or crack while drying.

Generally I prefer to glue narrow lumber pieces to yield a wider stock. Wide lumber, unless sawn near the outside of large diameter logs, tends to warp more than two narrower pieces glued together. I know we are discussing bee hives, not table tops or book shelves. If you have wide boards from small trees and they are fully dry and not too badly warped, go ahead and use them. Medium and shallow supers, requiring narrower wood, are not a problem as the widths are easily available.

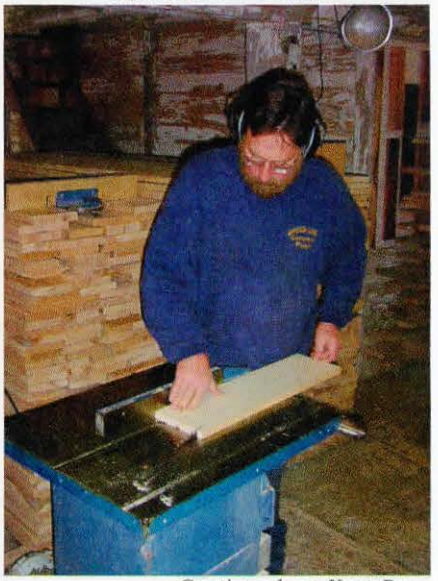
Types of Joints

There are several possible ways to join the box corners (figure 1). The most common and strongest is the box or finger joint. It's not a difficult joint to cut with a dado

Narrow stock is easily available for medium and shallow supers. For deep supers, the lumber may need to be joined to yield 9-1/2" or 9-5/8" width.

Apply just enough clamping pressure to hold the boards loosely together. Align them, tightening the clamps as you go. Use moderate clamping pressure. Too much squeezes the glue out of the joint, weakening it.

Rip boards to width.



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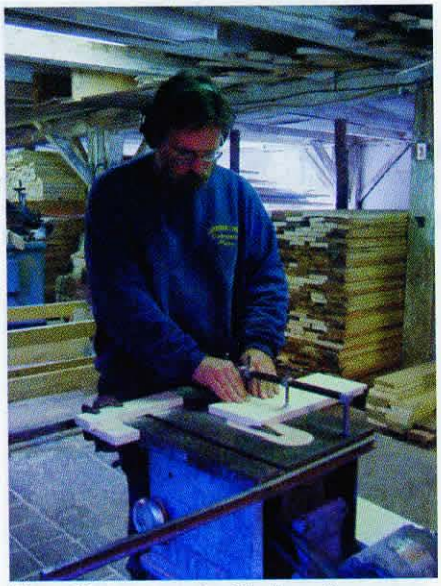


The rabbets are cut with the miter guage. The board clamped to the saw table automatically positions the stock for milling.

Cutting the frame rest rabbet with a dado blade.

Handhold cut with the dado blade showing the fence setup.

Finding the ideal dimensions

Beehive manufacturers do not make identically sized parts and they locate bee spaces differently (fig. 2). When different brands are stacked, the bee space between them may be either too large or small, and the bees glue things together. It is important to make all hive parts as interchangeable as possible. To that end, you may want to alter dimensions to fit your own equipment. The easiest way to derive the correct dimensions for your own equipment is to start with your frames' dimensions. There are three critical measurements – the height, length, and thickness of the lugs (See fig. 3) . The width of the frame sides can be variable but Hoffman style frames are pretty standard - 1-3/8".

I measured a couple dozen commercial frames from among my equipment. Height varied from 9-1/4" to 9-3/8", most being 9-3/16", a nice average. Length varied from 17-5/8" to 17-3/4". Most were 17-3/4". Lug thickness varied from 1/2" to 3/8". The large majority were 7/16".

The bee space, the space bees leave between combs, is generally considered to be from 1/4" to 3/8". If you include a bee space of either 1/4" or 3/8", you'll have more trouble if any of the frames are out of square. To reduce that problem, I used 5/16" for the bee space - halfway between the extremes. Adding 5/16" to each side of the 17.75" frame plus 3/4" for the wall's thickness yield an outside dimension of 19-7/8", right in the middle of my commercial supers which vary from 19-3/4" - 20".

The super height comes from the height of the frames – 9-3/16", plus the bee space which equals 9-1/2". Most of my supers are actually 9-5/8" in height. All the plans in publications and on the internet call for 9-5/8" deep supers.

The width of supers is the least important but most consistent dimension among various brands – 14-3/4" inside or 16-1/4" outside dimension. The bees draw out the comb, leaving a proper bee space (usually) whether the beekeeper puts in eight, nine or 10 frames.

The thickness of the frame lugs determines the position of the bee space between supers. Most of my lugs are 7/16" thick. If the frame rest is dadoed to 5/8", the bee space is split approximately evenly between the top of the super and the bottom of the next super up. This may reduce but doesn't eliminate problems with mixing equipment from multiple sources.

blade on the tablesaw but requires an accurate finger joint jig to cut the fingers (directions for making a finger joint jig are available in the Bee Hive Construction booklet in the classified section). The biggest advantage of the finger joint is the large amount of side grain to side grain surfaces for gluing. End grain does not form a strong glued joint. There are no other simple joints that allow gluing side grain to side grain unless you cut grooves across the corners and insert splines.

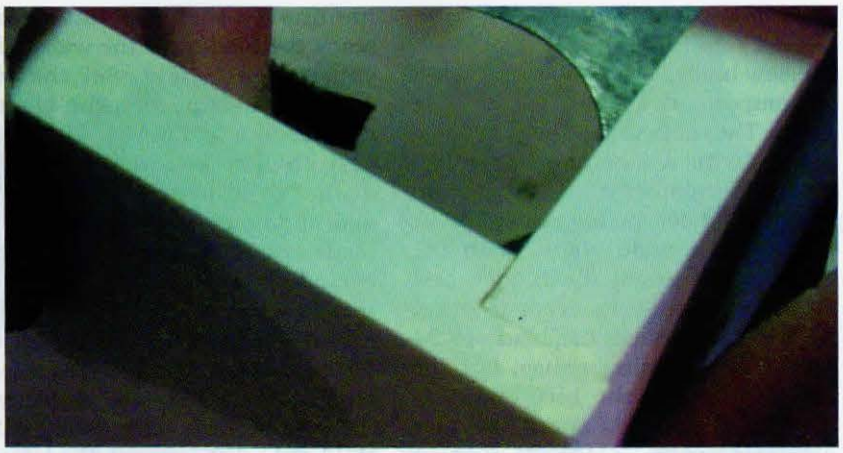
The simplest and weakest joint is the butt joint. The nails take all the strain. Butt joined supers are forever loosening and must be renailed periodically. I've accumulated a number of these boxes. The biggest disadvantage of butt joints is when fellow beekeepers discover you have them. You become the butt of their jokes and are not respected as a serious beekeeper. Keep butt joined boxes in secluded apiaries and paint them with camouflage colors.

The rabbet joint is stronger than the butt joint. It can be cut on a table saw with a regular saw or dado blade. It is a simple joint and easy to make, especially if your woodworking skills are a little rusty.

Tools

There are many ways to perform milling operations depending on available power tools. Starting with rough lumber requires a jointer and planer. The jointer flattens one face

Setup is faster and more accurate using a guide stick accurately cut to equal frequently used sizes.



Finished joint should be tight and flush.

to remove warp and is used to straighten edges. The edges can also be straightened on a table saw with an extra long fence. The rest of the operations require a table saw with a regular and dado blade.

Pipe clamps or other similar clamps are necessary to glue lumber to the appropriate width. Use a waterproof wood glue such as Titebond® II.

Use a carpenter square to make sure the saw is properly adjusted before cutting a stack of parts. It's depressing to assemble misaligned parts after putting a lot of work into them.

Safety Note

Modern power tools have many safety features not found on older tools. Always use the existing safety features no matter how inconvenient they seem. On old machines, look for ways to attach boards to limit the blade's exposure. Wherever possible, use push sticks. If an operation seems dangerous to you, it is. Find another way to it. Keep blades adjusted to the lowest possible height to reduce the chance and severity of accidents. You cannot save money making your own supers when you include a trip to the emergency room.

Procedure

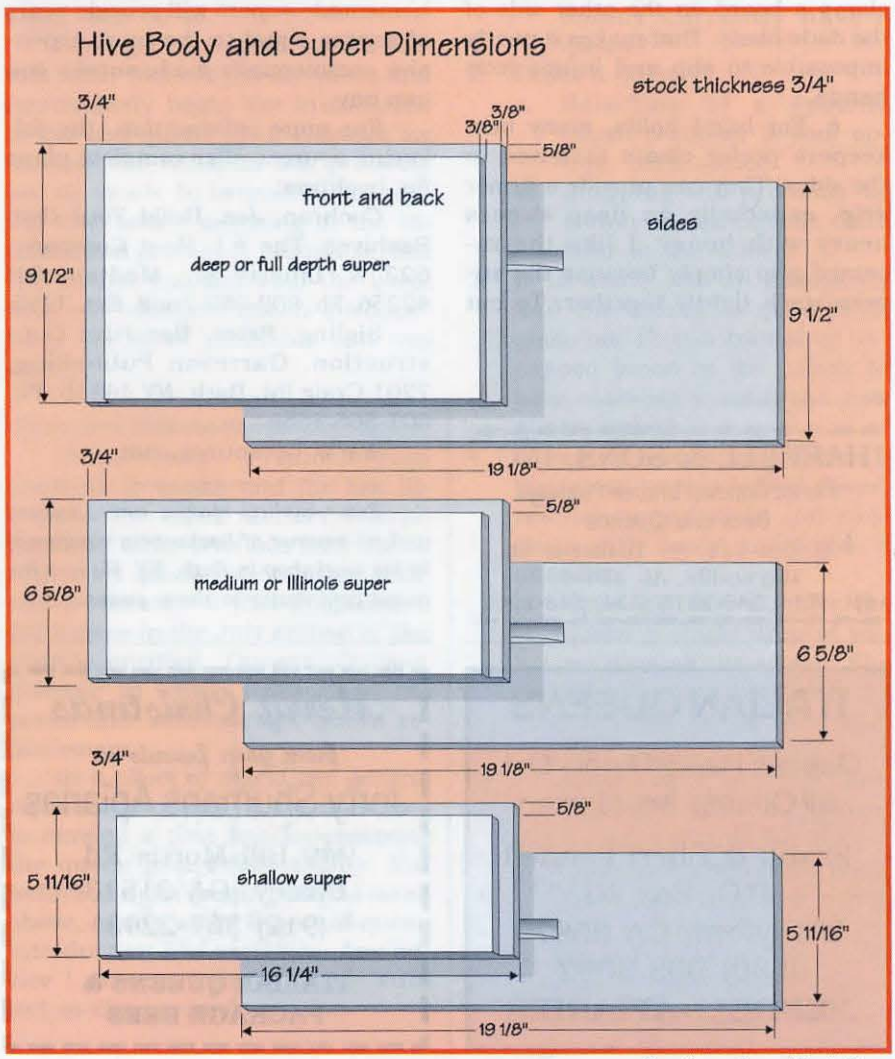
Make sure all blades are sharp before starting. Coat machine surfaces and blades with paste wax. Re-wax frequently.

1. Flatten the stock on a jointer, then plane to 3/4" thickness. Some people skip the face jointing if the lumber is relatively flat.

2. Straighten one edge on the jointer or use a planer cut blade on the table saw to make a gluable edge. Glue the stock wide enough to yield oversized panels. Biscuits or dowels are not necessary. The glue joint is stronger than the wood. Align the edges carefully while clamping.

3. Rip to the appropriate width on the tablesaw, according to the super sizes you are making.

3. Crosscut the super sides and ends to length. To cut identical parts quickly, attach a straight square board to the miter gauge long enough to extend beyond the longest part. Clamp a stop block to the board the appropriate distance from



Continued on Next Page

SUPERS ... Cont. From Pg. 35

the saw blade. Then saw out a stack of components.

4. The rabbets may be cut in two passes with a saw blade (see *Bee Culture* November '02 issue) or the waste wood can be hogged out all at once with a dado blade. With the dado blade, stack the blades and chippers on the saw arbor to make a 3/4" dado. Raise the blade to 3/8" Using the miter gauge, cut the two rabbets on the hive ends exactly 3/4" wide. To speed the process and improve accuracy, clamp a board to the saw table as a guide (see photo). The stock is pushed up against the board, then clamped or held against the miter and milled. A stop block could also be clamped to a board fastened to the miter gauge.

5. For cutting the frame rest rabbet stack the dado cutters to yield a 3/8" rabbet, reset the dado cutter to a height of 5/8" Set the fence 3/8" from the blade. For safety clamp a board on the other side of the dado blade. That makes it nearly impossible to slip and injure your hands.

6. For hand holds, many beekeepers prefer cleats fastened to the sides. They can provide a firmer grip, especially on deep supers heavy with honey. I like the recessed grip simply because the supers stack tightly together. To cut handholds with the dado blade, stack the blades for the widest dado your set will yield. Set the fence approximately 3" from the blade for deep supers and 2-1/4" for medium and shallow supers (or whatever distance you prefer). The hive sides and ends can be centered over the blade and held down as the blade is raised until it doesn't quite cut through the surface. Longer hand holds can be cut by marking the center on the fence and clamping stop blocks about 1" before and beyond the length of the parts being milled. Hold the part against the starting stop block. Raise the spinning blade into the wood, slide to the ending block and shut off the saw. Wait until the blade stops completely before removing the completed part.

7 Assemble the parts. Glue will not hold on these joints. I use 6d, 2" spiral thread galvanized siding nails to improve the holding power. BC

With proper maintenance, your homemade supers will provide years of service equal to the most expensive commercially made supers you can buy.

For more information, the following sources offer complete plans for beehives:

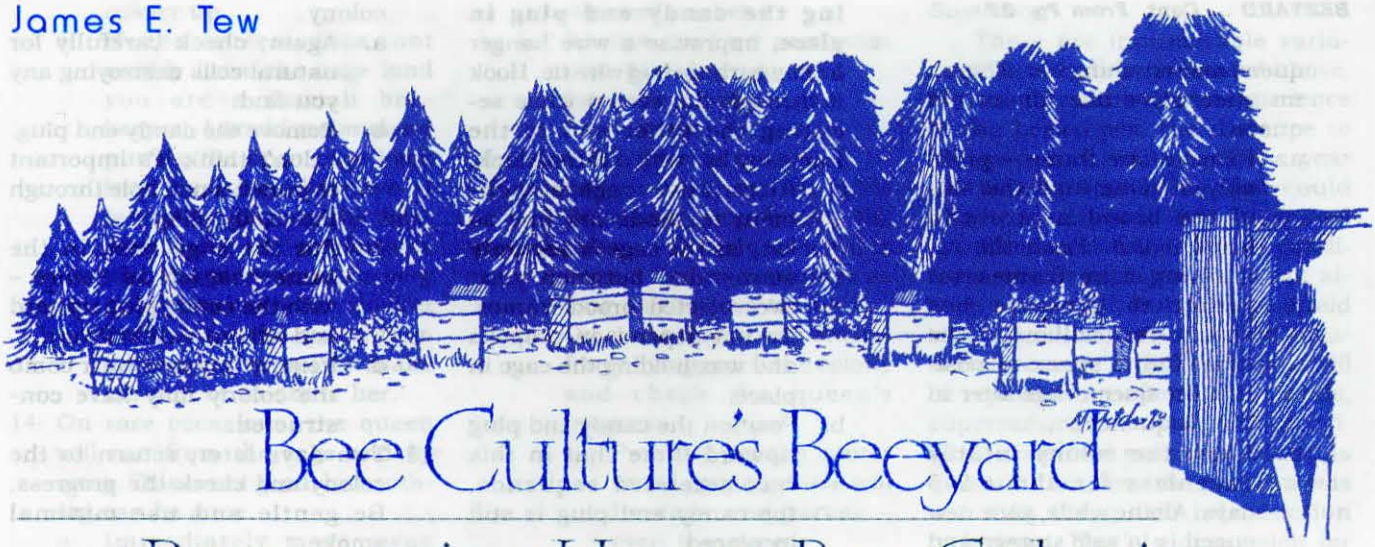
Cochran, Joe. Build Your Own Beehives. The A.I. Root Company, 623 W Liberty St., Medina, OH 42256. Ph. 800-289-7668, Ext. 3255.

Sieling, Peter. Bee Hive Construction. Garreson Publishing, 7201 Craig Rd. Bath, NY 14810. Ph. 607-566-8558.

WWW.beesource.com

Peter Sieling makes nucs, supers and all manner of beekeeping equipment in his workshop in Bath, NY. He is a frequent contributor to these pages.

James E. Tew



Bee Culture's Beeyard

Requeening Honey Bee Colonies

Entire books have been written that explain the requeening process. Requeening is a fundamental task for all progressive beekeepers – and even some who are not so progressive. Hive requeening is done literally thousands and thousands of times per year across the country. Most of the time, things work out well, but surprisingly often, things go awry. A surgical procedure gone bad as it were. How can that be? How can something that is so basic to beekeeping – something that is done so often – a procedure recommended by countless professionals – why can't we perform the task with certainty?

Some details

Bees are remarkably resilient. In the requeening process, there are few things that will absolutely be in the "Wrong" column. To stress the point, yes, it is important that the old queen be removed, but in some instances, the requeening process will still be successful – even if the old queen was not removed. But why in the world would you take the chance? Yes, it is important to remove the attendant bees before beginning the introduction process. However, if you are a new beekeeper and are uncomfortable removing the attendants, your effort is not torpedoed. Depending on your skill, if less risk is incurred by leaving the attendants in the cage, then do so.

Can't get back to the yard a second time? Remove the old queen and immediately begin the installation of the new queen. Your chances for success are reduced, but probably not by much. In essence, I am saying that nearly anything in the introduction process is negotiable, but the farther you get from the basic tenets of common queen introduction, the more problems you can expect.

Abundant information on the subject

Requeening information abounds in books and the bee literature. For quick starters, Joseph Latshaw[1] did a brief but informative article on queen introduction principles recently in this magazine. I did a piece in the July edition of *Bee Culture* entitled, *Queens, Queens, Queens*[2] in which I described the perils and successes of queen replacement.

In a effort to digest the general recommendations, I have attempted to develop a time-line for replacing the queen in a single colony. But before I even begin, as I stated above, nearly every aspect of queen introduction has variables. Any advice I present here is clearly subject to change and variation.

Requeening Event Timeline

1. Make decision to requeen the colony
   a. Requeening should occur during warm months
   b. Emergency? Does the colony currently have a queen?
2. Order a queen
   a. Selection of a specific queen producer is your option. Seek advice.
   b. Shipping will probably be slower in springtime than later in the season.
3. If 1b above was an emergency and the colony is queenless, place one or two frames of uncapped brood in the colony to help stabilize it until the new queen arrives.
4. Queen arrives in good order. If the queen arrives in bad shape, reorder immediately and continue with brood addition – if possible.
   a. Upon her arrival, offer the queen a single drop of water through the screen. She may or may not take it.
   b. Store the queen in a cool, dark place. If stored for a longer time, see the companion article on Queen Banking in this issue.
   c. Don't worry about the occasional attendant bee dying.
5. As soon as you have a good replacement queen in hand, dequeen the colony. Most likely, this procedure is nothing more than finding the old

Continued on Next Page

[1] Latshaw, Joseph. 2002. *Queen Introduction – Things to Consider.* Bee Culture. Vol. 130 (3). Pp 39-40. bee.airoot.com/beeculture/months/02mar/02mar3.htm

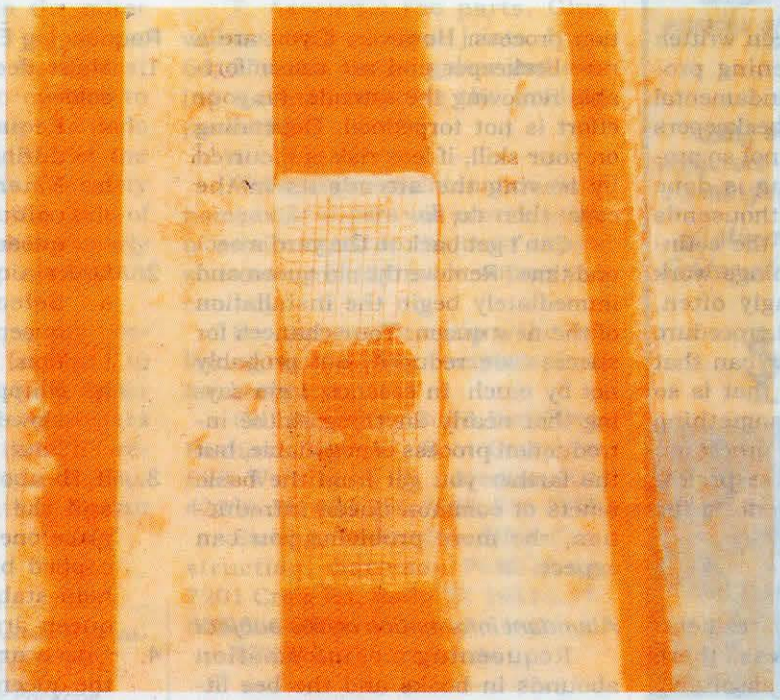
[2] Tew, James E. 2002. *Queens, Queens, Queens – Miscellaneous Comments and Procedures.* Bee Culture. Vol. 130 (7) Pp. 21-23.

BEEYARD ... Cont. From Pg. 37

queen and crushing her. There's no alternative use for an old queen.

a. Remove one frame – probably a frame from the side of the brood nest – and leave it out. Push the remaining nine frames together to preserve bee space. You will need the extra frame space to position the queen cage later in this sequence.
b. Allow the colony to stay queenless for about 2-3 days. All the while, your new queen is in safe storage and is being offered a drop of water per day.
c. Begin to feed the colony 50:50 sugar syrup – even if there is a nectar flow ongoing.

6. At anytime during a warm day, if possible, take the new queen, in her cage, to the hive location which was dequeened before.
   a. Go to the brood nest of the colony.
   b. Search carefully for natural queen cells and destroy them.
   c. Select two brood frames having emerging brood in them.
   d. Continue to feed sugar syrup.
7. Probably using forceps, in the cab of your truck or near a glass window, remove the opening cork plug to the queen cage and remove the attendant bees. Note that some plastic cage models won't have attendant bees. If there is a threat of either losing or damaging the queen, skip this step.
8. After completing #7, and **leaving the candy end plug in place,** improvise a wire hanger from a garbage bag wire tie. Hook it through the screen while securing the other end to the frame top bar with a thumb tack.
   a. Alternative cage attachment methods are fine so long as the cage is **securely** suspended between your two selected brood frames. Do not depend on propolis and wax holding the cage in place.
   b. Position the candy end plug upward (Note that in this recommended sequence, the candy end plug is still in place.)
   c. Be certain that the screened wire side of the cage is available to the hive bees. Outside nurse bees will need to feed and touch the confined queen.
   d. You may have to cock the two selected brood frames at an angle to suspend the cage near the frames' center, but the frame removed earlier will give you extra working space.
9. Let the colony sit for 2-3 days under these conditions. Continue to feed the colony during this time.
10. On day 2 or 3 after installing the queen cage, return to the colony.
    a. Again, check carefully for natural cells destroying any you find.
    b. Remove the candy end plug. I don't think it's important to punch a nail hole through the candy plug.
    c. Put the cage back in the same position as before – with the candy plug upward and screen side outward.
    d. Remove any new burr comb the colony may have constructed.
11. Two days later, return to the colony and check the progress. Be gentle and use minimal smoke.
12. If the queen has been released, remove the cage and reposition frames if necessary. Don't do a hive inspection at this time (even though you will want to.)
13. If the queen has not been released, release her.
    a. DO NOT release her if nurse bees are aggressively clutching the cage. Check the colony again for queen cells or for the rare second queen. Look for eggs in the colony. There should not be any. If there are eggs, abort the replacement procedure and go back to step #5 to begin again.
    b. If everything looks okay in the hive, reposition the queen cage and check again a day or so later.
       i. If bees on the cage flurry about and scent while you are holding it, it's okay to release her.
       ii. In wooden cages, using your pocket knife, pry the staple from the non-candy end of the cage wire and bend the wire back out of the way.
    c. Release the queen as near the brood combs as possible.
    d. If the queen runs out, fine. Reposition frames, remove the cage and close the



colony up.

e. If the queen does not readily leave the cage (and you are a newish beekeeper), I would recommend putting the open cage back into position. Remove it later that day or the next day. If you are comfortable with the process, again very gently using your pocket knife, tease the queen from the cage. Try not to make her run or to excite her.

14. On rare occasions, the queen will run from the cage and fly away. This is not good, but nothing can be done.
    a. Immediately move away from the open hive and leave it open. On some occasions, the lost queen will return to the open hive.
    b. You probably will not see her return. Leave the colony open for a hour or so in order to give her time to return.
    c. Filched from another colony, put a frame of uncapped brood in the colony. During the next day or so, gently check that specific brood frame for the beginnings of queen cells.
        i. If queen cell construction is underway, destroy them and return to step #2.
        ii. If you do not see queen cells, but neither do you see the queen, check again for either the queen or cells about every two days for about 5-6 days. Sometime during that period, you should begin to see the occasional egg indicating the presence of the new queen.
        iii. If after about 5 days, you have not seen either the queen or eggs, return to step #2 above.
    d. Step 14, or the lost queen step, does not occur very often.
15. If the queen left the cage okay and moved down into the brood combs, you are off to a good start.
    a. Gently, with minimal smoke, replace the frame removed earlier.
    b. Remove any burr comb that may have been started.
    c. Feed the colony
    d. Close it up.
16. Allow 4-5 days to pass.
    a. Somewhere during this timeframe, stop feeding the colony – though no harm is done if feeding continues as long as they are taking it.
    b. On a nice day when bees are freely flying, open the colony and check the queen's progress.
        i. Probably on the center brood frames, there will be eggs and larvae – even the queen.
        ii. Seeing the queen is not necessary so long as eggs can be seen.
        iii. Make this a very quick, perfunctory inspection.
17. After about 10-14 days, the new queen will be fully established, having her own brood nest, and the colony can be considered to be successfully requeened.

Summary

There are innumerable variations on the steps presented above. The number of hives, the experience of the beekeeper, the distance to the yard and the time of the year are all characteristics that could dictate changes to my suggested list. Even under the best of conditions, queen replacement is not always successful, but don't be afraid to try. A similar problem that occasionally occurs is that the queen will be replaced but after a short while, supersedure cells will be started. While there are problems with this queen in this hive, the problem was not with the queen introduction technique. That's a discussion for another time. BC

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MARTIN'S HONEY FARM

Susan Peterson Gateley

Mead, creamed honey, wine, candles, and yes, bees, all make a business in upstate New York.

At Martin's Honey Farm in upstate New York two hobbies were merged a few years ago to give rise to a new family business. First back in 1994 Ginny and George Martin turned hobby beekeeping into a commercial venture. Then their son Bill went pro as a wine maker. Today the Martin's are producing thousands of gallons of mead a year and selling it and other honey products at their farm store in Sterling, NY and at other outlets in the area.

Ginny Martin explained that she and her husband George, always had an interest in bees. "We kept a hive right by the back door when we lived in the city of Fulton." When George retired, that hobby mushroomed into a full time business. The couple tried migratory bee keeping for several years driving a truckload of bees down to the Carolinas and Florida each Fall and going north in the Spring to Maine for blueberry pollination. At one time they and their two sons, Ed and Bill, were looking after 2000 hives. They currently have about 1500 colonies placed on dairy farms and other locations between Watertown and Rochester.

A sample of the Martin line.

But then Bill came home from college with lots of ambition and a new idea, mead making. At the time cheap imported honey was starting to make the Martins' road to profitability a bit sticky. The idea of turning honey worth 43 cents a pound into wine with a retail price of $9.00 a bottle sounded pretty sensible to George and Ginny who had thousands of pounds of it to sell.

They plunged into the world of value added agricultural products with the assistance of Cornell University and the Geneva Experiment Station and its pilot bottling plant. The pilot plant was set up a few years ago as part of a comprehensive program combining food science and agricultural expertise to encourage on farm processing of crops in the hopes of helping New York farmers stay in business. The Cornell wine lab, created to assist the growing grape and wine industry of the Finger Lakes region was also helpful.

Bill Martin was already an adept amateur wine maker and had acquired considerable knowledge of the ancient drink of mead. Men have been fermenting honey and water for thousands of years and, not surprisingly a number of ways of making it have also developed over the millennia. Bill Martin read up on mead, consulted with other meaderies and wine experts and worked with the Geneva facility as he experimented with various types of yeasts and honeys. Mead is not widely

known or marketed as a commercial wine, nor were any of the other local wineries producing mead in quantity.

Mead can be an ale like drink, a sparkling wine, or a "still" (non-carbonated) wine depending on how it's produced. Regardless of the ultimate type, all good mead starts with fresh high quality honey. The different types and ratios of the sugars found in honey of various origins effect fermentation and the ultimate character of the mead as does the moisture content of the honey. The Martins after some experimenting settled on using lighter early season honey predominantly from clover.

Bill Martin

The initial mix of honey and water can be sterilized by the age old technique of heating it to a near boil or by the much newer method of ultra filtration. Heating causes a very slight carmalization of the honey sugars and gives the wine a very different flavor than filtration does. It also takes two full years to age this mead. Honey wine made with ultra-filtration is lighter flavored, less astringent and is more wine-like than mead made by traditional methods. It also can be produced in one year, making it well suited to a commercial endeavor.

Thanks to the honey farm's location along the Lake Ontario fruit belt, the Martins were in a good position to also produce fruit wines. Working with local growers, they lined up supplies of apples, pears, cherries, peaches, and apricots and even a batch of cranberries. Some of these fruits they blended with mead, others they used for straight fruit wines.

Because the market for sweet fruit and honey wines is very different from the better known grape wine varietals, the Martins decided to add a couple of "traditional" grape wines, a Seyval Blanc, and a red wine called Chancellor, to their offerings hoping to broaden the market for their farm winery's products. The Martins opened their farm store in August 2000. "We kicked George out of his workshop" recalled Ginny and then son Ed paneled the tasting area and built the serving bar of country pine. Ginny went into production with bees wax candles and created a line of creamed honey produced by the Dyce method and using peach, cherry, raspberry and cinnamon flavorings. And, of course, the store sells honey. The Martins also sell products made on nearby farms including some fruit salsas and a variety of pickled vegetables.

To boost their marketing clout, the Martins joined a group of recently established wineries calling themselves the Lake Ontario wine trail. This association of small farm-based wineries along the lake's shoreline between Watertown and Rochester pools resources for advertising, printing of brochures, and for wine tastings. The Martin's decision to try turning honey and water into wine was based in part on seeing the success and growth of other wine making businesses in the region. Over the last three years the region's wineries have drawn increases of tourist traffic running 25% a year.

Legal restrictions and the complexities and costs of shipping wine out of state, prompted the Meadery, like most small farm wineries, to sell mostly through a farm store directly to customers. The Martin's also sell mead at local liquor stores and through a summer event near their farm, the Renaissance Festival. After just two seasons, the Martins expanded their retail outlet by opening a second store on a busy intersection of two state highways on a well travelled tourist route the Cayuga Wine Trail. They also plan to move the wine production to that larger building as George Martin's one time workshop can no longer contain all the fermentation tanks, filters, presses and bottle supplies needed to produce a dozen different types of wine.

On the day of my visit Ed and Bill Martin were hard at work bottling a batch of their best seller, semi sweet mead. 350 gallons of clear golden wine stood nearby in a large cubical tank that was slowly emptying as one brother operated the bottler and the other corked each bottle and loaded boxes for shipping. When Bill stopped to answer my questions, his mother took over to keep the wine flowing. Between wine making, packaging honey, making candles and creamed honey and stocking and minding the store Ginny Martin stays as busy as her bees. "We haven't even had time to check up on all the hives yet" she told me during my visit in mid-May.

The growing wine business also prompted the family to cut back on the number of bees they are looking after and to abandon the migratory routine, selling their truck and trailer. "We're going to down size to about 500 colonies and get to where we can treat them right" notes Ginny. It takes time to sell a fine wine. Customers want to ask questions about the mead and fruit wines as they sample them at the store. And Bill hopes to expand production after they move to larger quarters and make a sparkling mead and some other types of grape wines. But even as the honey farm workers head off on a new adventure, their affinity for keeping bees and for the constant interest of working with Nature's seasonal cycle to produce wonderous food and drink remains strong. More information on mead is available at dozens of sites on the internet including www.gotmead.com www.honeywine.com and the national honey board site at www.nhb.org.BC

Susan Peterson Gateley is a freelance writer from upstate New York.

Flavored Honey IS A GOOD THING!

Ann Harman

"What? Flavored honey? No way." Many beekeepers feel *their* honey has the best flavor of all the honeys in the world. And they are right. Well, some honey really tastes terrible but we give that back to the bees who really don't care. But now it is time to step out of our beekeeping boots and slip into the shoes of the customer. After all, it is the customer who buys the honey, thanks us, and comes back for more. Isn't that what we want?

Not too many years ago flavored honey started making its appearance here and there. Perhaps flavored honey started with the honey stix. At first they were just plain honey, then they came in a few flavors, then as the popularity grew, the number of flavors grew. A response to consumer demand? Could have been. Nothing wrong with that.

Any beekeeper who sells at county fairs and other places where children are among the customers should be selling flavored honey stix. Children recognize them now and lead their parents to your honey sales booth. While the children are selecting their favorite ones, the parents have a chance to see the rest of your display. What an opportunity!

You will have to experiment with the many flavors of honey stix to see what sells not only in your area but also at the various places you sell honey. Yes, I just said "sell honey." Honey stix are an *addition* to your honey sales. Honey sales can be boosted with the many ways honey stix can be used.

"Buy a two-pound jar of honey and get 10 honey stix free!" Put that on a poster and mount it by your honey display. Give the customer the choice of flavors. Are you selling beeswax ornaments? When the customer buys one, put a flavored honey stix in the bag as an introduction to the delights of honey and flavored honey.

Christmas offers endless honey stix possibilities. Christmas stockings should contain quite a few favorite flavors. When you are wrapping a gift, fasten several to the bow. Actually, instead of a bow use a handful of honey stix fanned out into a star shape. Along with dishes of candy have dishes with honey stix. Oh go ahead and tuck some honey stix inside the gift before it is wrapped, even if it's a necktie in a box.

The "take a gift under $5." party is a perfect place for honey stix. A whole bunch of them in many different flavors can be the gift or you can just fasten some to whatever else you choose to take. You might consider a box of nice tea and some lemon-flavored honey stix as the gift to take. Be certain you have a card with your name and contact information for more honey sales. Are you having an Open House during the holidays? Every guest that comes must leave with Good Wishes for the Holiday Season and a handful of honey stix.

Is your office or organization having a Christmas party? Well, you can have red honey stix (raspberry, strawberry, cherry) tied to a green honey stix (lime, green apple) with a little ribbon as a favor for each person. By the way, make certain each table has a squeeze bear dressed for the occasion. Make certain your label is on the bear. If you make labels on your computer you can make a special one for the holidays. Just remember that black print does not show up very well on red paper. Better to use a white background with red and green printing.

Use honey stix in any centerpieces you make for holiday tables. Centerpieces don't have to be all flowers and greens. If you are making a gift basket featuring your honey you certainly can, and should, put some honey stix in. If you really feel like getting carried away with honey stix projects, hang some on the Christmas tree. Actually they look rather nice reflecting the tree lights. You might find they disappear as the days pass, so be sure to have a supply handy for replacements.

Honey stix really come in handy when family starts appearing in the kitchen with that "when do we eat" look. Quickly hand them a honey stix. It is very hard to ask the question when you are busy with a honey stix.

Flavored honey stix are just great but flavored honey is gaining popularity rapidly. You do not want to get left behind. With the flavoring powders that have recently appeared on the market, making flavored cremed honey is easy. Mid-Con in Kansas is now selling some freeze-dried fruit powders, four different fruits, so you can make your own. And flavored cremed honey does sell!

About eight years ago I lost a sale for a jar of honey when an elderly woman asked for lemon honey. She wanted it for her tea so she would not have to add honey and lemon separately. I had no flavored honey at the time. She refused to buy plain honey and said she would just keep looking until she found lemon honey. She had purchased some elsewhere and was certain that a beekeeper's honey booth would have lemon honey. That episode was enough to teach me a lesson – respond to the customers (and keep in mind that they are not beekeepers!).

For flavoring honey you can add flavoring oils for liquid honey or the freeze-dried powders for cremed honey. Fruit flavors, which are the real fruit turned into a powder, really blend and enhance natural honey flavor. Perhaps it saves the customer combining honey and jam on the same piece of toast.

To use the freeze-dried powders it is necessary to add them to creamed honey, not to liquid honey. To save you the experimentation, the freeze-dried powders float up to the surface of liquid honey. If you have never made creamed honey, now is a good time to start.

The choice of honey for making flavored honey is important. Yes, you will have to experiment with the particular honey you have to see if its flavor is compatible with the flavors you choose. Not every honey will make a successful flavored honey. Generally the milder honeys such as clover or alfalfa or a mild wildflower will be the most suitable. The freeze-dried powders will color the honey but this is not a drawback. People expect raspberry-flavored honey to be pink-red in color. After all, if you order a dish of raspberry sherbet, you expect it to be raspberry colored. Cremed honey is lighter in color than the honey it is made from so the addition of color from the powder will not be detrimental.

Start with the recommended amount of freeze-dried powder for the size batch you wish to make. It is best to start by making a small batch to see how both the flavor and color turn out. Once you have established the amounts for your particular honey, go ahead and make larger batches for sale.

Cremed honey needs to be put into a container with a wide mouth, never a queenline type jar. The plastic tubs are frequently used. Customers view these as being useful for other purposes when empty. Various attractive wide-mouth glass jars should be used for sales in upscale shops. Small sample-size jars can be used to give customers a chance to try flavored honey.

Pricing? Set your price higher than for plain, unflavored honey. Flavored honey is a specialty item and the price should reflect that. Besides, you added to your honey costs with the purchase of the flavors. Remember – even if you work for $0.00 per hour as a hobbyist, you still need to cover all your costs.

Labels? Yes, you need to put "ingredients" on your label but the only thing you have added is freeze-dried fruit. So your container has: honey, freeze-dried fruit. Other label requirements as far as your name and contact information would apply. If using food grade oils for flavor, you'll need to add those, too. Natural Flavorings usually work.

Will people buy flavored honey? Yes, definitely But don't even consider telling a prospective customer you don't approve of adding anything to your wonderful honey Let them tell you how pleased they are that you are offering flavored honey. Assure them that the cremed honey they have always enjoyed is now an exciting new product. No longer do they have to decide whether to use jam or honey on their toast. A fruit-flavored honey has the best of both.

Honey for tea is not a problem. So many different kinds of tea are popular that a cup of tea sweetened with blackberry- or raspberry-flavored honey is not only acceptable but a real treat.

Since this is the holiday season, it is a perfect time to make some of the fruit-flavored honeys to give as gifts. If you give just one flavor, put a hang tag on the jar that announces the three other flavors available. And be sure to put your contact information on the hang tag. In this way you can introduce many of your regular customers to your exciting new product.

Flavored honeys are now being found in many shops and supermarkets. This is not the time for you to sit back and offer just your plain honey. Yes, people will continue to buy that because it has a nice flavor and is useful for cooking. But if your customer buys two jars – one plain honey and one flavored – that is a sale of two jars instead of one. So now we have two happy people – the customer who really wants a flavored honey as well as plain, and the beekeeper who has just produced what the customer wants. BC

Ann Harman is a sideline beekeeper and international marketing consultant.

MAKE A SANTA BEAR

The Holiday Season provides unique marketing opportunities for honey. Many traditional holiday recipes include honey as an ingredient. Honey makes a great gift for that special friend or family member who already has everything they need.

One of our popular seasonal items is the Santa Bear. They make great stocking stuffers, Christmas party decorations, favors, and gifts. Encourage your customers to consider the possibilities- the gift of a Santa Bear is an inexpensive and unusual way to express appreciation to teachers, doctors, the mailman, family, friends, and neighbors. Santa Bears don't need gift wrapping! You might even give them to your best customers as a "thank you for your business." Remember to add a little to the price of your bears for their holiday outfits.

The Santa Bear hat is simple to make with or without a sewing machine. Go to your local fabric or discount store. Purchase red and white felt and a small package of 1/2" white pomoms. Felt is available in 12" square pieces, or you can purchase it by the yard. For the beekeeper who is not a seamstress the 12" squares will be easier to manage, and they are also an economical choice, as they retail for approximately 25 cents each. To make the hat pattern, draw a circle 6-3/4"in diameter, and divide into thirds. Each third is a hat. Sew a 1/8" seam along the edge of each cone then turn the hat right side out. Try it on your honey bear. If it seems a little too snug, stretch it gently with your fingers until you are satisfied. Cut a strip of the white felt 5/8" wide. Fasten it to the lower edge of the hat with a glue made for use on fabrics such as Aleene's Tacky Glue or Fabri-tac(our favorite). Trim off excess. Once you have glued the white trim to the hat it becomes very difficult to stretch, so be certain to check the size first. Glue a pompom to the point of the hat. If you do not have access to a sewing machine but would like to make the hats, try this method. Cut out your hat. Lap one of the edges you would have sewn over the other. Hold or pin the edges in place and check the hat for size on a honey bear. Once you have the correct size and alignment, glue the lapped edges in place. You will not need to turn your hat right side out. One 12" square of red felt yields five hats and five scarves. The scarf is even simpler to make. Cut a strip of red felt 5/8"wide and 12"long. If you like, you can "fringe" the ends by making four consecutive cuts 1/2"long on the ends of the scarf. Tie it around the neck of your bear. Put on his hat. You now have a cheerful seasonal product guaranteed to boost December honey sales.

-Nancy Tozier Sieling

BANKING QUEENS

Queens Are Fragile. Handle With Care.

James E Tew

This is one of those topics

Banking Queens – this is one of those topics that caught me unawares. At my lab, we routinely *bank* queens. It's all in a day's bee work. But after Editor Kim asked that I explore this topic for this article, I was surprised to discover that queen-banking is not a clearly defined procedure.

For those of you who have not had to store queens for a short time, queens held in storage are referred to as *banked queens*. But since this procedure is not standardized, in different books, such queens are also logically called stored queens, nursery queens or even reservoir queens and are said to be held in colonies bearing the same name (i.e. storage colonies or reservoir colonies).

What most of us do – ideally

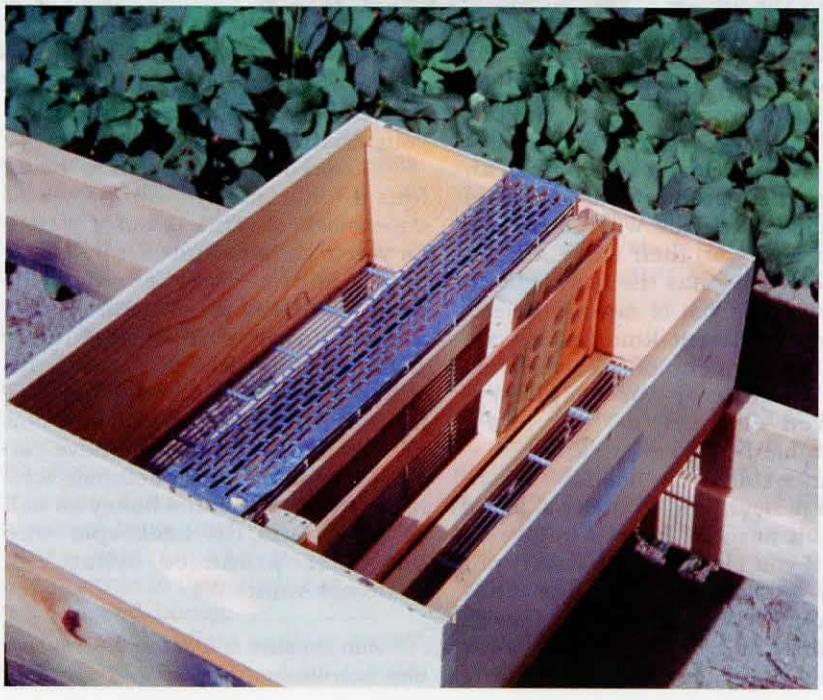
By far most queen banking procedures are nothing more that a beekeeper's procedure for storing queens until they can be installed in a colony. Ideally, the storage colony should have a strong population of young nurse bees. A queen excluder should confine the colony's queen to the lower brood chamber away from any stored queens. In order to entice young house bees to the vicinity, emerging brood should be near the stored queens. Young nurse bees are not antagonistic toward foreign queens and will readily feed them; whereas, older field bees, being much more opinionated, will aggressively clutch the cage in an effort to kill the confined queen.

In order to hold the confined queens as near as possible to the brood combs, beekeepers construct originally-designed frames or racks. There is no standardization of such frames and none, of which I am aware, are available commercially.

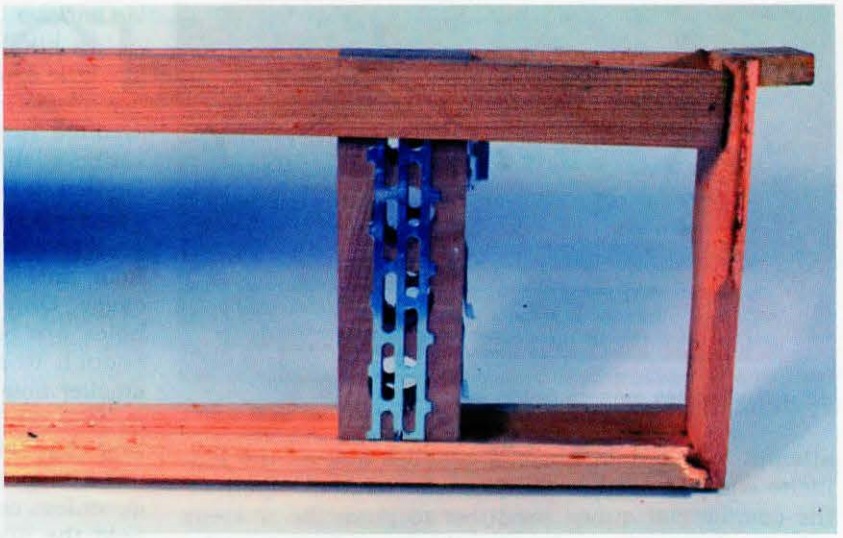
At The Ohio State University, Wooster, many years ago, we used a complicated device for holding queens until they could be either shipped or used. A medium-depth super was modified to accept special frames that held special queen cages. A queen excluder was tacked to the bottom of the super.

In the photo shown, queens were stored either within the special frame above the queen excluder or caged queens were confined within the partitioned area shown in the figure. The partitioned area was a cage made from queen excluders. All parts of the partition, except for the two ends, allowed the free entrance of nurse bees. When using this partitioned cage configuration, the lower queen excluder could be eliminated. In either case, as in all queen-banking procedures, an abundance of young nurse bees was imperative. Nurse bees, as you probably know, produce the most, and the best queen food. It is important that your stored queens get as much food as they'll possibly need during storage. This is stressful to begin with, and a skimpy diet will not enhance the experience. Nurse bees are also more inclined to cluster if the temperature becomes an issue. Again, this helps reduce any stress your quens ae enduring.

Each cage that is in the special frame was a wood block (7/8" thick) with four individual ¾" holes bored in the middle of the block. Each side was covered with cut strips of zinc queen excluding material – though screened wire could have been used. A short piece of aluminum stripping (recycled from a soda can) was tacked on



A queen storage device used at The Ohio State University, Wooster.



A specialized frame and cage for banking queens.

with a single small nail and was used to cover a second hole (3/8" diameter) on the edge that served as an entrance hole into each ¾" hole. This is where the queen stayed. The top bar was modified with strips to form a slot through which the cage blocks would be dropped onto the tray-like modified bottom bar. To suspend the contrived frame in the super, lugs were attached onto the end bars. This all sounds much more complicated than it really is. All it required was wood scraps, some zinc excluder strips (or screen), and a spent pop can. This procedure was not common among hobby beekeepers.

What most of us do – realistically

Honestly, I suspect most beekeepers do nothing more than strip a strong colony down to the top of its brood nest area and lay queen cages atop the brood frames – being careful to align the cage with the bee space between frames – with the screened surface facing downward. In this way, nurse bees have the greatest possible access to the screened surface of the queen cage. For simplicity's sake, most leave the attendant bees confined with the queen, though it would be better to remove them. Normally, an inner cover is reversed with the deep-side-down and is placed over the caged queens. The outer cover is repositioned as usual.

In this simplistic procedure, the colony's queen is not restricted, no brood frames are moved and no specialized equipment is constructed. Call the project done.

How long can confined queens be banked?

There's no clear answer other than the quicker you can introduce the queens, the better. I don't think any researcher has ever said that storing queens is good for them, but this is a necessary procedure until such queens can be employed in a new hive. In general, queens can be dependably held for 5-7 days in a bank colony using the simple procedure just examined with a high expectation that all will still be alive. However, with any queen-banking procedure, you simply must not be surprised to find the occasional dead queen. Why do they die? Neglect, over-heating, cooling, some physiological reason – I don't know.

What commercial queen producers do

Producing queens is a demanding procedure even for commercial producers. Once the procedure is established for a particular spring season, queens are produced and mated in great numbers. Rather than

A queen bank frame in a commercial apiary using single-hole queen cages.

Continued on Next Page

An antique queen nursery frame.

attempt to maintain nucleus colonies and all the requisite equipment, it is much easier (ergo cheaper) for the commercial queen producer to push the nucleus colonies during the spring months to produce as many queens as possible. Mated queens are banked in special colonies having uniquely designed frames for holding queen cages. Frequently, queen cages are simple blocks of wood having a hole about 1½" across covered with screening on both sides. There is a small hole bored in the cage top to allow the queen to escape when the time comes to transfer her to a traditional introductory cage. Queen bank colonies can be either queen right or queenless – depending on the queen producer. In either case, ample young nurse bees need to be routinely introduced to keep their numbers high.

Overwintering Stored Queens

To this point, all queen storage has been short term – the shorter the better. An elusive goal through the years, has been to bank queens in the fall for use the following spring. Though some success has been achieved storing queens over the winter, only about 50% survived for six months. Essentially, overwintering stored queens is not widely practiced and is not generally successful.

Some sophisticated procedures have been commercially attempted. For a while, Wilbanks Apiaries maintained a small building that was thermally insulated with controlled temperature and humidity. Similar efforts were made in Canada to hold queens through the long winters. Some researchers reported that it was the natural aging of the young nurse bees into older bees that caused the loss of queens stored overwinter.

I tried a variation on this theme, but rather than banking queens, I attempted to overwinter queen-right nucleus colonies in Ohio. For two winters, I established nucleus colonies, in different configurations, and set them out for the winter. My preliminary survival numbers were no better than those projects attempting overwintering banked queens. Roughly 40% of my nucs died during the winter. Overwintering banked queens continues to be a good idea with the promise to improve beekeeping, but a dependable procedure still eludes us.

[1] Doolittle, G.M. 1915. Scientific Queen Rearing. A.I. Root. Medina, OH 126 pp.

[2] From the 1933 A.I. Root Catalog

An antique

In his 1915 book, *Scientific Queen Rearing*[1], G.M. Doolittle discussed "nursery cages" suspended in "nursery frames" as being highly useful, but little used. He credited Henry Alley (1883) with being the first to describe such cages, but Doolittle gave specific credit to Dr. Jewell Davis, an individual unknown to me, for first designing the nursery cage and frame concept.

From our university bee museum, I have an A.I. Root[2] antique nursery frame that will hold 24 individual cages. Only three of the original cages remain. Two holes are bored in the top of each cage – one large enough to accept a ripe queen cell (1/2") while the smaller hole (3/8") is for packing sugar candy to serve as feed while the queen is being introduced. At the time that Doolittle wrote his book, selling virgin queens was common. The principle behind the frame is that a queenless colony, strong with young nurse bees, would hold the nursery frame. Virgin queens would emerge from their cells into the cages where culling could occur. I have personally used a variation of this frame to hold virgin queens in preparation for instrumental insemination procedures. However, it is obvious that the frame could be used to stockpile mated queens until they could be used. Note that the three individual trays within the frame will swing outward to facilitate dropping in the cages.

In the 1924 Lewis Beeware catalog, a nursery frame capable of holding 34 queens in *Rauchfuss* Nursery cages was advertised. The Rauchfuss cage was a popular cage of the day, but is now long out of production.
My point – banking queens in nursery frames is an old idea – probably one more actively practiced in past beekeeping eras. Today, no standard banking frames are available but beekeepers have been quick to improvise, even to the point of not using a frame at all.

In summary

- If you keep bees long enough, you will eventually need to hold queens for a while. If only for a few days, queens can simply be kept in their shipping cages and held in a darkened area in your home.
- If you need to hold queens longer, put them in a colony having a strong population of young nurse bees. If storing queens for 5-7 days, simply laying them on the top bars of brood frames will probably be okay. But check after a couple of days.
- If you plan to routinely store queens, consider improvising a nursery frame. I'm sure you will use your imagination.
- Obviously, you should expect some of the banked queens to die. Being imprisoned in cages is not a normal queen condition. We should be happy that only *some* of them die while in storage. BC

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?DO YOU KNOW?

Beekeeping Potpourri

Clarence Collison
Mississippi State University

As we approach the end of another year, beekeepers need to be concerned with the characteristics and quality of the products that were derived from their beekeeping operation, determine what their equipment needs will be in the spring, become more familiar with potential pests that may impact their investment, and stay abreast of current conditions associated with the beekeeping industry.

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

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

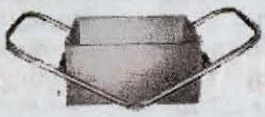
1. ____ Granulation changes the water content of the ungranulated portion of honey.
2. ____ When liquid beeswax cools and becomes solid, it loses about 10% of its volume.
3. ____ The cloudy appearance of mead is caused by the minerals found in honey.
4. ____ All species of honey bees in the world except *Apis mellifera* are native to Asia.
5. ____ The greater wax moth is a more serious pest than the lesser wax moth.
6. ____ Throughout the Americas virtually all genetic traces of European honey bees have disappeared in areas occupied by African bees for 10 years or more.
7. ____ Honeydew is normally higher in pH than honey.
8. ____ Honeydew is lower in glucose and fructose in comparison to the average composition of American honey.
9. ____ Honey bees prefer to collect nectar over honeydew.

(Multiple Choice Questions, 1 point each)

10. ____ The polariscope (honey crystal detection device) was developed by:
    A. E.J. Dyce
    B. R.A. Morse
    C. J.W. White, Jr.
    D. O.W. Park
    E. G.W. Demaree
11. ____ Unfertilized eggs contain ____ chromosomes.
    A. 20
    B. 32
    C. 40
    D. 10
    E. 16
12. Name three honeyflow conditions/honey characteristics that are undesirable in the production of section comb honey. (3 points)

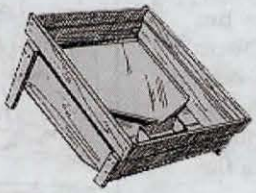
(Fill in The Blanks, 1 point each)

13. _____ A clarifying tank between the extractor and honey pump for removing the coarse particles of comb introduced in the extracting process.
14. _____ The science and art of maintaining and managing honey bees for man's economic benefit.
15. What is a nucleus colony? (1 point)
16. Please identify the following items associated with the beekeeping industry (1 point each)



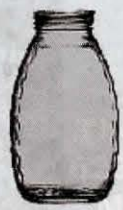
_____
A.

_____
B.



_____
C.

_____
D.



_____
E.

_____
F.

17. What two factors impact the length of the wax moth larval stage? (2 points)

ANSWERS ON NEXT PAGE

?Do You Know? Answers

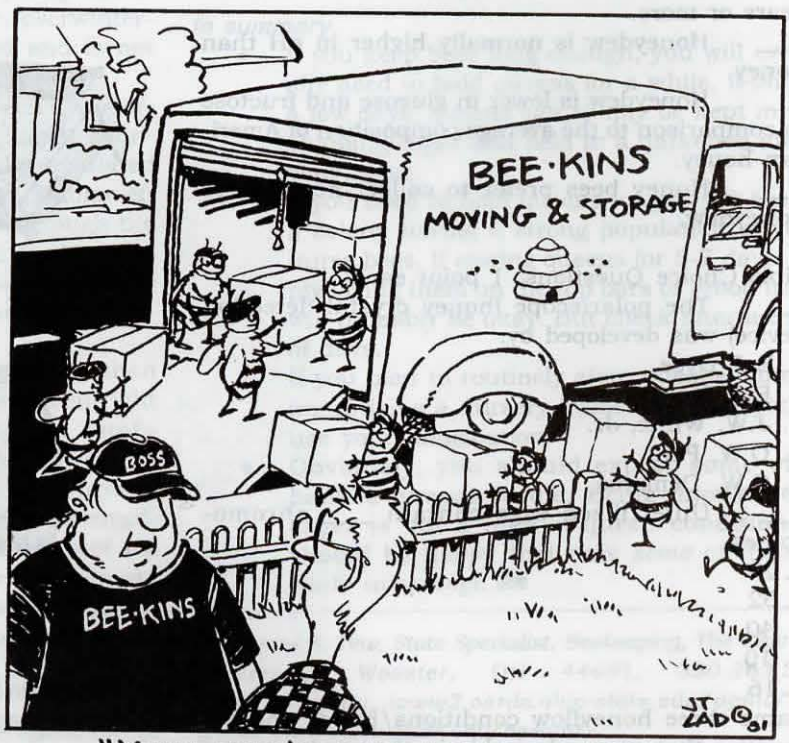
1. **True** There is little variation in the moisture content of liquid honey in a barrel or jar. When honey crystallizes, however, a small amount of water enters the glucose crystals (9.09%) and since honey is 17-18% water, the moisture content of the remaining liquid honey between the crystals increases.
2. **True** To the naked eye, liquid beeswax, upon cooling appears to have a smooth surface. Under low magnification the surface of a wax cake is seen to be full of ridges and depressions resembling ripples on the surface of water. During cooling from a liquid to a solid, beeswax decreases in volume by about 10%.
3. **False** Mead with a cloudy appearance results from proteins that are found in honey. To avoid the cloudy appearance, many individuals boil the honey-water mixture for 20 to 30 minutes. This precipitates the proteins that are present in honey and has the effect of making a clear beverage, which is more pleasing to the eye. If the honey-water mixture is not boiled, a precipitate will form throughout the life of the beverage and will give it a cloudy appearance, but this precipitate has no adverse effect on the flavor.
4. **True** Honey bees reach their maximum species diversity in Asia. *Apis mellifera* is endemic to Europe, Africa and western Asia.
5. **True** There are really only two species of true wax moths, the lesser wax moth and the greater wax moth, that feed exclusively on hive products associated with the honey bee. Of the two, the greater wax moth causes the greatest economic damage worldwide.
6. **True** African bees reached the United States in 1990 and genetically they are little changed from those in South Africa. Throughout the Americas virtually all genetic traces of European bees have disappeared in areas occupied by African bees for 10 years or more. There appears to have been complete genetic displacement of the European by the African biotype.
7. **True** Honeydew in comparison to honey normally has a higher pH value. The average pH of honeydew is 4.45 and that of honey is 3.91.
8. **True** Comparison of the average honeydew composition values with honey indicates that honeydew has less glucose and fructose than is normally found in honey.
9. **True** The amount of honeydew collected by honey bees will depend on the availability of nectar, which is generally preferred by the bees. Honeydew is more likely to be gathered during times of nectar dearth.
10. C) J.W. White, Jr.
11. E) 16
12. Honey that rapidly crystallizes. Dark colored honey.
    Honeys from various floral sources mixed in the combs (intermingling of honey flows).
    Honey flows that are slow or intermittent, results in stained cappings.
    Areas where excessive propolis is produced.
13. Honey Sump or Sump Tank
14. Apiculture
15. A nucleus colony is a small hive of bees, usually covering from two to five frames of comb. They are used primarily for starting new colonies, rearing or storing queens. Also called "nuc"

16A. Hive Lifter
16B. Straw Skep
16C. Solar Wax Melter
16D. Queenline Honey Jar
16E. Classic Honey Jar
16F. Wigwam Honey Jar
17 Availability of Food, Temperature

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

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

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



"YEAH, THEY'RE GOOD LITTLE WORKERS, BUT EVERY FEW WEEKS THEY ALL DROP DEAD."

Richard Taylor

Bee Talk

"You will probably make no truly new discovery with an observation hive of your own, but you can watch for yourself one of the great wonders of nature."

The other day a friend gave me a spiral-bound book on observation hives, put together by Thomas Webster and Dewey Caron and published by the A.I. Root Company. It is loaded with pictures and diagrams and covers every conceivable aspect of the subject – how to make one, where to buy them, what to look for, everything.

The book got me thinking about my own experiences. I remember making my first observation hive when I was about 16, but that was so long ago that I don't recall much else about it. Then back in the 50s – it must have been 1954 – I acquired a real good one. I was at a bee meeting, in Rhode Island, and our host had there this observation hive, not in use. It was perfectly constructed, with a one-frame bottom story and a detachable super-size story, also one frame, the two separated by a queen excluder. Since it was not in use I asked the owner what he would take for it. He thought for a minute, then said "Well, give me a couple dollars." An incredible bargain.

I set it up in my study window and spent hours watching. I didn't learn anything I didn't already know, but I was able to watch the dance language, see the queen laying eggs and the workers doing their jobs – it was endlessly fascinating. One Summer it swarmed, and I watched the bees make a new queen. And in the Fall, after a couple days of rain, the weather turned real warm, and the bees loaded that little hive with goldenrod honey in no time. That did show me how fast nectar can flow, even into a tiny hive.

I've taken my observation hive to many fairs and festivals, but I'm not sure now that there was much point in it. It served only as a conversation piece, sort of like a tropical fish aquarium would. People didn't want to take the time to actually learn anything from it. They would just come along and, at my urging, find the queen, and that was it. The fact that all sorts of wonders were taking place under that glass completely escaped them.

Tom Seeley did a much better job with one of his observation hives this past Summer. He set it up at the EAS meeting, attended by nearly 400 beekeepers, and scheduled regular workshops. Dr. Seeley is perhaps the best all-around bee research scientist in the world today, and, with his enthusiastic audiences, he was able to offer genuine and valuable instruction. He had maps of the area, and the beekeepers could actually watch and interpret the dance language of returning scout bees. They were visiting two different places, one of them where purple loosestrife was blooming. Dr. Seeley knew exactly where these places were and, with the maps, the observers could figure them out. There are, of course, several distinct behaviors besides the well-known figure-eight dance, and he was able to distinguish them all. The beekeepers did actually learn something, a lot in fact, from actual observation.

The greatest historical achievements with an observation hive were gained by the Swiss naturalist, Francois Huber, born in 1750. Indeed it is doubtful whether, given the primitive state of apicultural knowledge of that day, anyone has ever made more significant contributions to this field. Sadly, most beekeepers today have never heard of him, and I have even seen a comprehensive encyclopedia of beekeeping in which he is not even mentioned. It was Langstroth, to be sure, who laid the groundwork for bee husbandry by his discovery of the bee space, and Karl von Frisch who advanced the knowledge of bee behavior so spectacularly, but Huber's discoveries were, in his

Richard's sweet step-daughter, 40 years ago, is now a university professor.

day, momentous. He was blind, and all his observations were second-hand, through the eyes of a faithful and dedicated servant, François Burnens, an uneducated but gifted peasant.

Huber used a "leaf hive," that is, an observation hive of several combs, constructed in frames that were hinged at one end so that the several combs could be spread out like the pages of a book. Thus he was able to peer into any part of the colony that he wished, simply by turning the leaves as one would turn the pages of a book.

For centuries the queen bee had been called the king bee, as people imagined it was some kind of ruler. I don't think it was Huber who corrected this notion. Someone else, I think, had already seen this "king bee" laying eggs. But it was Huber who discovered that beeswax comes, not from pollen being brought in on the bees' legs, as Aristotle had thought, but from nectar itself, and he described the way the bees produced it. Pollen, he discovered, was used to feed the developing brood. And the beeswax combs can be made from sugar syrup as well as from nectar, he discovered. He for the first time described the manner of the queen's fertilization, the existence of laying workers, mutual queen hostility, hive ventilation, the function of antennae, the origin of propolis, the manner in which a worker larva can be converted to a queen, and the existence of memory in bees. Thus he showed that bees will return to a familiar source of nectar even after a long Winter – a pretty long time for the tiny brain of a bee to remember something.

Of course bee research today has gone far beyond simply watching bees to see what they do. The greatest advance, inaugurated by Frisch, has been to observe bees as they live in nature, see what they do, and then ask, "How do they do that?" For example, Frisch noted, as just about every beekeeper has noted, that something sweet, such as a bit of honey, syrup or jam, can rest exposed in the open for a long time, until a single bee happens across it. Soon after, bees by the dozens are coming to cart it away. Evidently, the first bee had some way of telling the bees in the hive, perhaps a considerable distance away, where it was, and Frisch asked, "How did it do that?" It was that question that led to his astounding discovery of the dance language.

Although I never learned much that I didn't already know from my observation hive, I did, over the years, learn a few things about maintaining it.

First, such a tiny hive soon becomes congested. The way to reduce the population is to remove it, during the night, and set it on a regular hive, preferably (but not necessarily) a mile or two away. Then, after a day or two, in the daytime, when the bees are flying well, return it to its previous location, leaving the foragers to join the hive below.

Second, the bees will glue the glass in with propolis so it cannot be removed without difficulty. The solution is to smear Vaseline on the edges of the glass at the start.

Third, the glass eventually becomes smeared with propolis and wax, obstructing vision. This can be scrubbed off with paint remover or similar solvent.

It would be hard to think of anything in nature offering a more engrossing subject for study than a honey bee colony. You will probably make no truly new discovery with an observation hive of your own, but you can watch for yourself one of the great wonders of nature. BC

Richard Taylor is a philosopher and beekeeper from the Finger Lakes Region of New York.

OBSERVATION HIVE ADVENTURES

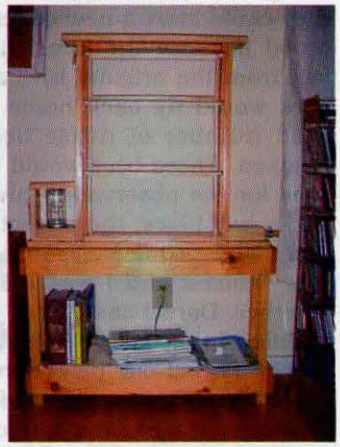
David Langham

"My son & I decide to build an observation hive. And put it in our living room."

What do you get when you put two "first year" beekeepers and an observation hive together? Answer: a prime candidate for "Beekeepers Funniest Home Video" Fortunately for the two novices, the cameras were not rolling. Here is the story. On the suggestion from a member in our local beekeeping organization (Orange County Beekeepers Association), my teenage son, Daniel, and I decided to build an observation hive. This way we could see what was actually happening in the new hives we had installed in April. Our resolve was set and much to Mom's concern, it was to be located in our living room.

I found some plans (www.beesource.com) on the internet and with my old handsaw, some leftover wood from hive making and a friend with a table saw, I built the observation hive to support two full and one medium frames. A matching table was built and bolted to the wall and a plastic tube was fashioned to go out the living room window. Mom was again promised that no bees would be flying around in her house.

Final Observation Hive



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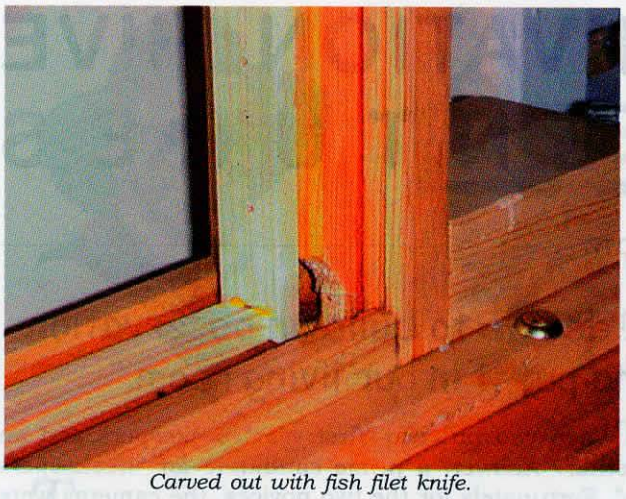
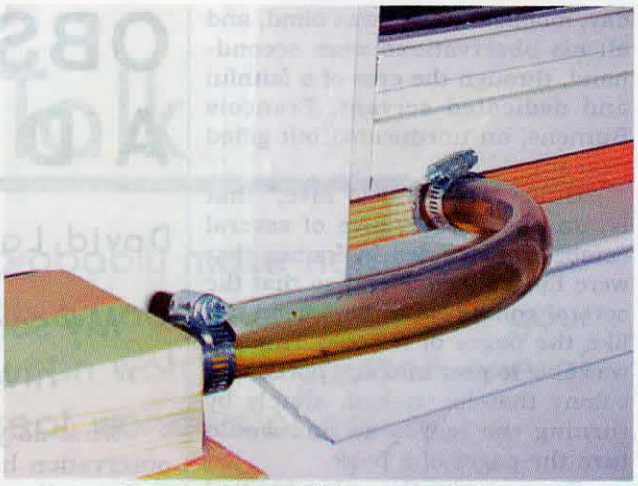


Carved out with fish filet knife.



Entrance tube out living room window.

On July 17th Daniel and I went through our two hives in the yard looking for a frame to start the hive. The perfect frame had to have eggs in the cells so that they could start a new queen. We wanted some capped brood because the location of the hive was only fifty feet from the original hive and we knew that the field bees would fly back home. Also of necessity were a good number of nurse bees that had just recently hatched. These bees would be the first generation field bees for the observation hive. After going through one and a half hives, the perfect frame was not to be found and I was getting frustrated. I felt like the whole project was doomed and I was ready to put everything back together. Daniel said "Dad, just look in that one in the middle of that last hive body" Between the two of us, one of us had our head screwed on correctly! He was right. There it was. The perfect frame: eggs, larvae in a variety of stages, and lots of nurse bees. We took the selected frame and put it in the hive with the two frames with foundation on top and closed everything up.

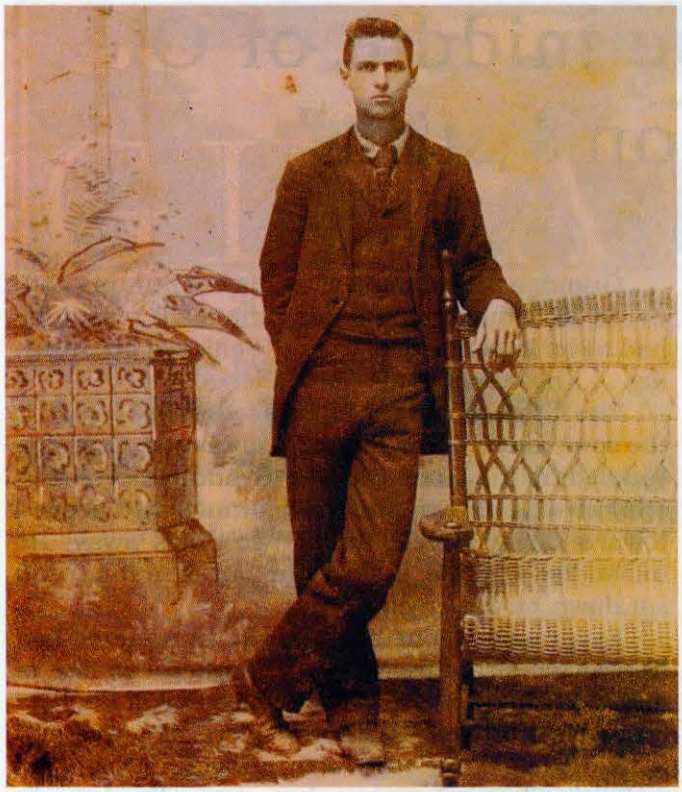
I was feeling very proud of myself and grinning from ear to ear when Daniel pipes up "ahh Daaad! Did you want the queen to be in the observation hive?" There she was, running around in the sealed up observation hive! It had not crossed my mind that the queen would be on or near the perfect frame. That was where she was laying! Fortunately, the queen had run up to the top frame of foundation so when we opened one side it was easy to remove that frame and I gently shook it into the main hive. The queen scurried back into her home and we closed both hives back up.

With the observation hive put back together, we carried it into the house, bolted it to the table and hooked up the entrance tube. I was feeling a swelling of pride (again) when Daniel pipes up, again, "ahh Daaad! I don't think that the bees can get out of the hive." Sure enough, I had cut one of the slots which holds the bottom frame in place higher on one side and lower on the other, causing the frame to be crooked and blocking the entrance to the tube. We disconnected the tube and unbolted the hive and took it out to the picnic table. Daniel lifted and held the glass just high enough and I took my fish filet knife and carved out the wood on the hive where the tube attached creating enough space for the bees to come and go. Again, we closed everything up. As you might imagine, the bees had had about enough of us by this time.

We carried the hive back into the living room and again bolted it to the table and attached the entrance tube. *Now* we were ready to show Mom. From upstairs she yells, "I'm not coming down!" So we waited, excited to show her our new science project. About an hour later, she realized that no bees were in the house and when she saw the final product, she had to admit that it was pretty interesting. That night we had friends over for dinner and all was going well until one of the little girls says, "David, is that bee supposed to be flying in the light bulb?" I jumped up and ran to get my caulk gun and sealed that hive tight! My wife didn't say too much about the incident but she kept a close watch on the hive for several weeks.

The observation hive had a great year. We watched two queen cells being built, and done by July 21. I can not tell you how excited Daniel and I were when, on July 30th, we first saw the new queen. We were equally excited when, on August 9th, we saw eggs in the bottom of the cells. Due to the small population and late timing of our installation, the bees didn't begin drawing out foundation on the next frame until September 9th, and didn't finish until the next Spring. But being in our heated living room, the single frame did quite well through the winter. In the evenings, the bees would hum, sometimes softly and sometimes quite loud. Friends and neighbors would drop by to see the hive and children especially loved it. Daniel would keep his friends and teachers at school updated on the progress and when his friends came over, they would often go straight to the hive before going to play. I kept sugar water on it but the bees did not totally draw out the wax on the second frame until February. Then the bees went crazy building wax cells. It was the most interesting winter that we have had in our home. BC

David Langham is a beekeeper in Orange County, North Carolina.



Grandpa's Last Bee Hunt

Terry Keeling

Grandpa was considered one of the best bee hunters in the community.

"The still was right over there, a little ways out from that big Pin Oak tree. He was getting his water out of that little spring on the other side of the clearing. He had a little lean-to shed right over there where he kept his corn and sugar " Grandpa pointed out the different locations to me. I had heard the story many times, but I had never before seen the exact spot where it all took place.

The year was about 1955 or 1956. Since Grandma's death a couple of years earlier, Grandpa (Len Keeling) would sometimes get sort of nostalgic this was one of those times. He had asked me to drive him around to a few places that were important to him. We had gone to the Evans Chapel Cemetery, where Grandma was buried, along with their three children that had died as babies. We had visited the Leona Cemetery, where Grandpa's parents were buried. We had then gone to the Spring Creek Cemetery, an old, old black cemetery, dating back almost to slavery times. Grandpa had grown up with, and had known well many of the people buried there. It was after leaving the Spring Creek Cemetery that he had directed me to this spot, about a half-mile away.

Leon County, like most of East Texas, had always been a "dry" area, and I was aware that, in the past, even after Prohibition had ended, illegal whiskey stills were not particularly uncommon in the area.

"Everybody knew Old Man Jackson was operating a still somewhere back in here (he had been making whiskey just about all his life)," Grandpa continued, "but we didn't know exactly where. I didn't want to know where it was. He had threatened to kill me, more than once. He blamed me for turning him into the law the last time he got sent to the pen. I didn't turn him, but somehow he thought it was me. I always figured it was that Baptist preacher up close to Jewett that turned him in. The old fool should have known better than to sell whiskey to that preacher's boy. Anyhow, I took his threat real serious like. I was scared to death of him. He had killed at least three men that I knew about, and I figured it wouldn't bother him much to kill another one. He was mean enough when he was sober, but he stayed likkered up most of the time and that made him even meaner."

There weren't very many things that Grandpa was afraid of. He was a scrawny little man – I doubt that he ever weighed more than 140 pounds – but

Continued on Next Page

"I was right in the middle of Ole' Man Jackson's still."

he was tough as whet leather. He had to be tough otherwise he never would have made it. Born in 1872, he was orphaned at the age of 13. After his parents died (his father in 1883 and his mother two years later) he stayed on the "home place" with a couple of his younger siblings and operated the farm. It's hard to imagine a 13-year-old having that kind of responsibility, but I guess he did what he had to do.

Grandpa later married a local girl, Gertrude Shepherd, and continued to live on, and farm the same place. Like most farm families of that era, they were pretty much self-sufficient. The raised most of what they needed. One exception was sugar However, they could substitute honey for sugar, at least for most purposes. Many families maintained a hive or two of domestic bees for their honey supply. Others, however, like Grandpa, preferred to get their honey from the wild, by robbing a bee tree.

Thus it was, that one day (sometime in the 1920s – we're not sure of the exact year) Grandma informed Grandpa "Len, we're getting pretty low on honey. Do you have a bee tree spotted?"

There was a very strict code that applied to bee trees. Anyone who found a bee tree, regardless of its location, could mark it with an "X" and that meant it was taken. No one else would touch it. The "owner" could then come back later, usually in the Fall, cut the tree down and take the honey.

Grandpa studied for a moment. "Things are kinda slack right now. The cotton and corn crops are laid by and I've got a little bit of spare time. Maybe I ought to go bee hunting."

Grandpa was considered one of the best bee hunters in the community. The whole principle of bee hunting was based on one premise – after a honey bee drinks water, it will then fly in an absolutely straight line back to its tree (hence the term "bee-line"). It wasn't possible to actually follow the bee, but you could mark its line of flight by lining up three trees in front of you. As long as you maintained that perfectly straight line of travel, you would eventually come to the bee tree. As soon as you got close, you would hear the buzzing sound of the bees. You could then mark the tree, and return later to rob it. Bee hunting required very, very intense concentration. If you ever looked away, you might lose your line of sight and would have to start over

Grandpa prided himself on his bee hunting ability. In fact, that was probably the main reason he had never kept a hive of bees. He enjoyed bee hunting he considered it a challenge.

The next morning, after he finished milking the cows and tending to the other chores, Grandpa saddled up his mule, Old Joe (Grandpa never rode a horse – he always preferred a mule) and headed toward Boggy Creek, about two miles away. He unsaddled Old Joe, staked him out on a rope, and sat down by the creek to wait.

Eventually, a lone bee came in, lit, watered and flew away. Grandpa carefully marked the line of flight, lining up a Pin Oak tree close by, a big Post Oak with a broken limb about 50 yards away, and a big Sweet Gum still farther away. He started walking, always keeping three trees lined up in front of him. He didn't let anything interfere with his concentration – not the ticks crawling up his leg, not the mosquitoes working on his back – nothing.

As Grandpa put it "If I hadn't been concentrating so hard, I would have smelled the mash cooking. As it was, I was about 10 steps out in the clearing before I realized what I had done. I was right in the middle of Old Man Jackson's still. I figured right then I was a dead man. I expected to feel a bullet in me any minute. That was the most scared I had ever been, in my whole life. I turned to my left, towards the edge of the clearing . . . I figured that's where he would be . . . and there wasn't anybody there. I looked all around, but he just wasn't there. It was a Friday, and I figure he must have been out making deliveries to his regular customers that wanted to stock up for the weekend."

"I didn't waste much time looking for him," Grandpa continued. "I lit out of there at a high lope. I didn't stop till I got back to where Old Joe was staked out. I threw that saddle on him, jumped on him, and high-tailed it back to home, as fast as he could go."

A couple of weeks after that, Grandpa traded a sow and two shoats to a neighbor for a hive of domestic bees.

Grandpa never went bee hunting again. BC

Terry Keeling is a freelance writer/photographer from Richmond, Texas.

GLEANINGS

DECEMBER, 2002 • ALL THE NEWS THAT FITS

Win Win For Everybody

COMVITA TRAINS NEW BEEKEEPERS

Honey producer Comvita New Zealand entered a joint venture with the Maori people of the East Cape to produce active manuka honey on otherwise unproductive land.

Some 300 hives were transferred from the *Varroa*-free South Island in a two-day journey aboard refrigerated trucks.

The venture began after 18 months of negotiations and Comvita said it has the potential to generate substantial returns for both the company and the Ngati Porou iwi (tribe).

The hives, valued at NZ$39,000, were placed at strategic locations close to the manuka that grows readily around Waipiro Bay.

Under the arrangement, the Maori landowners will be paid for hives on their property.

The hives have been supplied by Comvita, initially at no charge. In the longer term, the Maori at Waipiro Bay will purchase the hives and run them as a stand-alone operation. A trust will be established to place the project on a business footing.

Comvita will assist in the training land owners who are interested in beekeeping. Meanwhile, the hives will be managed by professional beekeepers.

At this stage, it's not known if the manuka honey produced will have the unique manuka factor (UMF) which exists in some manuka honey produced on the East Coast. This won't be known until more data is available. The joint venture's aim is to produce manuka honey with the UMF properties as well as standard manuka honey.

Some strains of manuka honey with the UMF properties outperform conventional antibiotics in treating infections, stomach ulcers and burns. They have also have proven effective against some antibiotic-resistant strains of bacteria.

Comvita operations manager Chris Elmsly said the Waipiro Bay Maori are excited because they can see a successful beekeeping industry will translate into jobs and income.

"One person can manage 400 to 500 hives," he said. "That number of hives could realize $150,000 over a six-month period. Even allowing for costs of $50,000 you can see there's a good living to be made."

Comvita chief executive Graeme Boyd called the joint venture thrilling.

"This is a first for us, a first for the East Coast people and a first for New Zealand," he said. "We are confident we have established a model that can be duplicated elsewhere."

Tairawhiti Federation of Maori Incorporations coordinator Bob Maru said the venture is a winner for the locals.

"The land is unsuited to any other crop," he said. "If the venture succeeds, the iwi could end up with half a dozen or so local people trained as beekeepers and could own as many as 400 hives."

Alan Harman

ABF TO MARK 60 YEARS - JANUARY 12-16, 2003

The American Beekeeping Federation will mark its 60th anniversary, Jan. 12-16 at the Westin Crown Center Hotel in Kansas City.

The activities begin on Sunday, when the Kids & Bees program sets up at Union Station's Science City, across the street from the hotel, from 2-4 p.m. That evening "early bird" arrivers can hear Sharon Gibbons report on her recent trip to New Zealand.

On Monday the convention opens with reports by President Pat Heitkam, Vice President David Ellingson, and Research Chairman Danny Weaver, and in the afternoon, the ABF Special Interest Groups will give commercial beekeepers, honey packers, queen breeders, and even hobbyists an opportunity to focus on points of special interest to them.

Speakers Tuesday morning include George Hansen, Drs. Mark Feldlaufer, Jeff Pettis, Jay Evans, and Anita Collins from the Beltsville Bee Lab; Drs. Diana Sammataro, Gloria DeGrandi-Hoffman and Gordon Wordell from the Tucson Bee Lab.

Speakers Tuesday afternoon include Tim Wendell, Bob Stevens, and Steve Forrest with a look at alternative mite control methods; Sharon Gibbons and Clint Walker on producer-packer promotions; and a trio of fire victims, Pat Heitkam, David Ellingson, and David Hackenberg, talking about their experiences. The afternoon session will conclude with a "Forum on the National Honey Board: Where It Is; Where It's Going."

David Ellingson will lead off the program on Wednesday with an overview of his beekeeping operations. On schedule for the day are Drs. Patti Elzen, Bob Cox, and Frank Eischen, reporting from the Weslaco Bee Lab, and Dr. Tom Rinderer with a report from the Baton Rouge Bee Lab, Dr. Marion Ellis, looking at reducing mite populations; Dr. Marla Spivak, Danny Weaver and Drs. Gene Robinson and Kevin Hackett.

Thursday morning are the ABF educational workshops.

For detailed convention information, including a registration packet, contact the ABF Office, P.O. Box 1337, Jesup, GA 31598, ph. 912-427-4233, fax 912-427-8447, e-mail: info@ABFnet.org, or access the website: www.ABFnet.org.

DROUGHT BOOSTS AUSTRALIAN PRICES

Northern Territory beekeepers are seeing honey prices double because of the drought over large areas of southern and eastern of Australia.

Mataranka beekeeper Jim Sullivan told the Australian Broadcasting Corp. that prices had gone through the roof because of the drought.

He said conditions in the Northern Territory had been reasonable despite temperatures of more than 104 degrees F.

"The price of honey has been too low for too long," he said. "Now this drought has forced it suddenly up. Between A$1.50 and A$2 was the standard price but now it's up A$3.80 to A$4 a kilogram."

Beeyard Nightmare!

The nature of emergencies is that they are unexpected.

Scene: A crowded apiary: toward the end of a warm, muggy day in early June. The bees in a rather spiteful mood anyway without any serious nectar flow available, but now, following a series of manipulations, in vile temper. The beekeeper, well protected, just closing up the last hive before departing. Enter, stage left, a 90-year-old gentleman, out for a stroll. Remarkably fit for his age, but somewhat deaf, and quite severely afflicted with senile dementia. His chosen path: straight across the front of the beehives.

I shouted at him, waving frantically: "GO BACK!! YOU'LL BE STUNG!" "Lovely sun!" he agreed, and tottered relentlessly on. I could not go to him: the maelstrom of angry bees battering themselves against my veil would immediately transfer their attack to him. More frantic gesticulations. "TURN ROUND! GO BACK! GET AWAY FROM HERE!" He waved back. "Yes, yes" he said and still came on.

Then: "Ow! . Stings! . Bees! "

There are things you should do when attacked by bees. Cover yourself as much as possible, especially the face and head, then get away from the area, as fast as you can. He did the opposite. He tore off his hat and coat to get at the hurting places – and made no move away at all. He even kept moving in the direction of the hives. There are also things you should not do when attacked by bees. To flap and wave the hands simply infuriates them all the more, and does nothing to drive them away. Trying to flick at them achieves nothing but more stings. To uncover stung parts of the body simply attracts other bees to sting the same place. He did all these things, and the bees behaved as expected. I was shouting at him, but he was in no state to hear or obey instructions.

I had to get him out immediately. I sprinted away to try to lose at least some of my own bees, grabbed a sack which happened to be at hand, threw it over his head, and half carried, half frog-marched him away. He wanted to stop and get to the hurting places, to clear out the bees inside his clothes, to sit down and rest. But we were still not out of danger, so I kept him steadily moving, with the sack in place, until we could reach the safety of a dark shed. No sooner inside than the flying bees departed.

I sat the poor old gentleman down, crushed what bees I could find crawling about him, and scraped away all the visible stings on his head, hands and arms. I was surprised to find only about 10 of them, though even that is plenty when you are nearly 91. There were perhaps as many others, we later discovered on his legs and torso. He was red in the face, and very distressed, but he is tough as old rope, and looked as if he would be alright for the time being. Assuring him I'd be back in no time, I sprinted off to find help. When I got back he was being sick, and trying at the same time to deal with soiled underwear. I gave him a pill (Benadryl). I had retrieved water, but it stood very little chance of going down. By this time more help had arrived. So the car and spare clothes were soon fetched. We cleaned him up as well as we could, then set off with all speed for the Accident & Emergency department at Dr. Gray's Hospital.

The reaction of the staff there was wholly admirable. Fast, efficient, courteous, reassuring, professional; above all, calm. The old gentleman was a rotten patient. He would not sit still. He would keep trying to pull off any gadget they attached to him. He would not stop flapping his arms and legs about, and twisting and turning on the couch, and getting all tangled up in his blanket and hospital garment. But in no time flat they had oxygen on his face and a needle in his arm, and various drugs pouring straight into him. Steroids to make sure his air ways were clear. Something to calm the nausea and the bee venom. A fan to cool him down. You could almost observe the drugs having their effect, as if by magic. The hot swelling gently vanished away, the pain and itching lessened, then virtually disappeared. All this time a high-tech instrument gave a digital read-out of the state of his lungs, blood, heart, etc. He was magnificent. No trace of anaphylactic shock. The man must be made of galvanized steel. The doctor and nurses agreed they would have estimated his age at least 20 years lower than it actually was. Soon he was quite comfortable, and calm. They decided to keep him overnight to be on the safe side, so we went home. The next morning we came to pick him up, and he strolled out of the hospital, not a whit the worse for experience. By the evening he'd completely forgotten he entire incident.

The bees are in disgrace, but they will remain. Are they dangerous creatures? Yes, but not if one takes all reasonable precautions. People with dementia are at risk in all sorts of situations. It is dreadful to think what would have happened had I departed five minutes earlier. What if he had fallen, with nobody about, and the bees as aggressive as they were? I must be about getting some gates to close off the whole apiary area. BC

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2002 BEE CULTURE INDEX

Title Index

Author Index

Obituaries

New Products

To Our Many Friends and Customers . . .

We take this opportunity to thank you for your patronage and support during the past year and all the years before. It is you, our faithful, loyal customers who have allowed us to remain in business and complete our 78th year serving beekeepers. We are deeply grateful to each and every one of you and want you to know you are appreciated.

We wish, for all of you, the most joyous of holiday seasons and a peaceful and prosperous year in 2003. We look forward to serving you in the coming year and far into the future.

Sincerely,

The Walter T. Kelley Company
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800.233.2899 FAX 270.242.4801
www.kelleybees.com

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One more's gone again. The Holiday season's upon us and year's end is in sight. All of us here – Dawn, Kathy, Jim and I wish you and yours the very best of the season. And Happy New Year, too. It will be even better.

Tim Dawn Kathy Jim

I've submitted several great ideas over the last few months for your magazine. I can't figure out why you haven't accepted them. My mother thought they were the best articles she's ever seen and she isn't even a beekeeper! I'll give you one more chance to look these over. Perhaps you were having a bad day when you first read my queries. These ideas are too important for the beekeeping world not to share them with your subscribers. They will help your magazine achieve the reputation as the leading publisher in fresh, original ideas in honey bee science and culture. I would hate to have to send these to your competition...

Scratch-n-sniff live foulbrood spoor – The incidence of foulbrood is increasing. For example, in New York State the rate of foulbrood infected colonies has nearly doubled from 1986 to 2001. Samples analyzed showed that 31% of the AFB found was resistant or moderately resistant to Terramycin. It is important that beekeepers recognize foulbrood. Prompt treatment or control can prevent it from spreading to other hives.

I've collected a five gallon bucket of old foulbrood comb. It's been fermenting nicely over the last couple months and the bucket is about ready to burst. When open, you can smell the familiar foulbrood odor a mile away. I'll send you the bucket for a modest fee plus shipping, handling and the hazardous waste permit. You stamp every magazine with a large spot of the stinky slime with an explanatory caption. This can help hobbyists recognize AFB.

We professionals are familiar with the smell of foulbrood, but many of your readers don't recognize the odor. This is a great educational idea and could also help your advertisers who sell Terramycin and any new antibiotics soon to be on the market. Many of my acquaintances who stick their nose in my foulbrood bucket find it in their hives within a year. Some had to burn their whole apiary. They'd never have recognized it without smelling it first.

Convert that old cement mixer into a radial honey extractor – The concept is simple, I think. All you do is make a metal or wooden rack inside a cement mixer and reverse the pulleys to speed up the rotation. Stretch queen size pantyhose over the end. You can strain and pour right into the bottles. There may be a few bugs to work out of this idea but I'll get started researching as soon as you send me a modest cash advance. I realize some of your advertisers sell extractors and this will cut into their bottom line. The editor must be willing to make tough choices when it involves the good of the little guy over the profits of big multinational corporate interests.

Super honey filtration system – Convert an old propane or air tank, air compressor, and coffee filters into a highly efficient honey filtration unit. You put the honey into the propane tank and force it under pressure through multiple layers of coffee filters. Your honey comes out water white and mild. It's so clear your customers will swear they're buying corn syrup.

Super hot chili sauce – It took years to develop the recipe for the hottest chili ever made. I bred super hot hybrid peppers and grew them in scorching desert-like conditions. Then I discovered the secret ingredient – bee stingers. When boiled for several hours, it hardens to a rocklike consistency. It's great for camping trips. No need to build a fire – just strike it with a piece of steel and it bursts into flame, warming itself up. Don't think you can steal my idea and sell it to NASA as a solid rocket propellant. It's patent pending.

Save money by bottling honey in old motor oil containers – You will stand out in the crowd of competing honey packers. Consumers are looking for something different. We print our own label and stick it on right over the old oil label. For novelty, we call our honey "Honzoil" Be sure to clean the containers thoroughly. We slosh them out first with kerosene, then paint thinner. Surprisingly, one of our best customers is an auto repair garage. They tell us that people walk in and buy four or five quarts at a time. Since they've stocked our "Honzoil" brand honey their engine rebuilding business has really picked up.

Build beehives from old *National Geographic* magazines – Check any attic or basement and you'll find hundreds of boxes of *National Geographic* magazines. In fact, according to scientists at Ohio State University, *National Geographic* magazines are multiplying at such a rate that by 2025 all the trees in the Brazilian rain forest will be converted into paper. The increase in the Earth's mass will alter its orbit, causing it to plunge into the sun by 2123. Here's a way to help reverse that trend and save the planet. With a simple homemade press and mold, you can recycle *National Geographics* into paper-mâché and injection mold them into supers, covers, bottomboards and even frames. The glossy paper repels water and the inks are naturally toxic to honey bee pests.

I believe any of these ideas could help your readers become better and more productive beekeepers. Who knows? Maybe your circulation will increase to the point where we'll need to turn your magazine into injection molded hive parts.

Thanks for your consideration. I've been previously published in the *Conspiracies Monthly Review,* the *American UFOlogist,* and the *Flat Earth Society Newsletter.*

Peter Sieling

Dear Editor,

BOTTOM BOARD