JUL 2009

# Bee Culture

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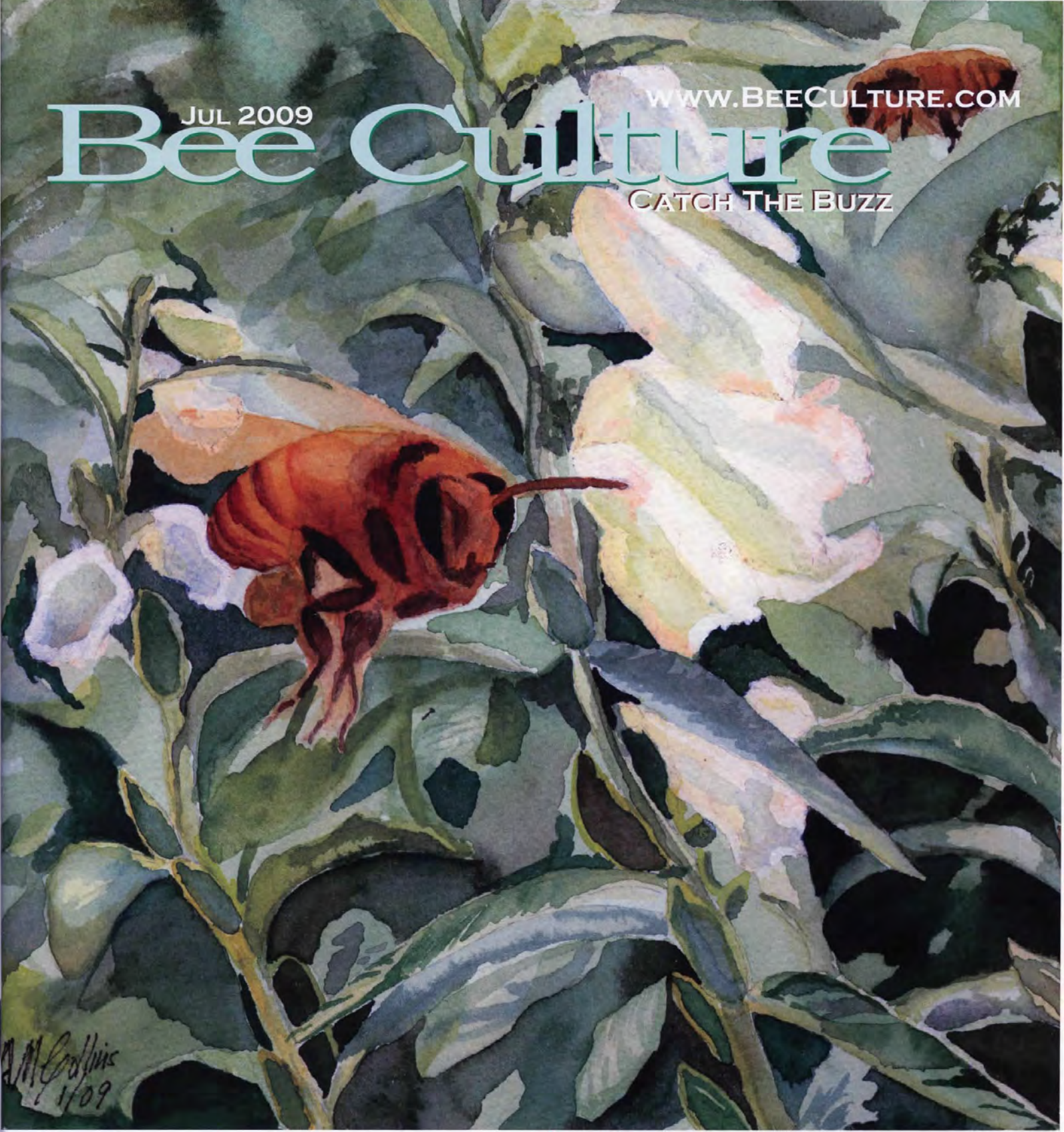

## INSIDE . . .



ROOT PUBLICATIONS
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*Since Dr. Anita Collins retired from the USDA Honey Bee Lab at Beltsville, she has been busy with her farm, and her painting. We convinced her to share this water color she recently completed with us. We hope there's more in the future*


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# Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

JULY 2009 VOLUME 137 NUMBER 7


## FEATURES

## DEPARTMENTS & COLUMNS



GLEANINGS-59, CALENDAR-60, CLASSIFIED ADS-61

## Science Journal

A+ – very nice, enhances credibility

Matthew Higdon
Hallsville, MO

## Enjoys Bee Culture

I have been reading your magazine since June 2006 and I have been enjoying it. I have been finding it very informative and I look forward to a new issue each month. I also enjoy rereading all the past issues during the Winter months.

Keep up the good work.

Ralph Blackwood
Conneaut, OH

## It's Not So Old

After experiencing some foulbrood, a two-frame galvanized extractor has been stored for about 30 years near Salmon, ID. A brother is employed with the Forest Service there and it's the birth place of Sacajawea. Would it now be safe to use the extractor or should it be disinfected?

Is lye the only product used for this purpose?

Are some galvanized extractors still being used where honey is processed and sold commercially?

Willie Rogers
Kennewick, WA

***Editor's Note:*** *You can clean this extractor with a thorough washing with soap and hot water, providing that you then coat the entire inside of the machine with CAMCOAT, a foodgrade plastic coating that seals the metals of the galvanized walls from exposure to the honey.*


## Cell Phones & Bees

I read with some interest about the effect of cell phones on honey bees (May 09).

My trouble was that my eyes and mind started to glaze over when the authors started using letters to describe his or her tests – F.S.M DSM-IV – MHZ etc. I finally went directly to the end (Conclusions and Recommendations) where it became clear that cell phones had no effect on honey bees. This was all done in one paragraph!

I'm sure some found the testing part interesting.

Being simple of mind I would like to explain what I've found out with bees. They remember and they forget. When a swarm issues it will usually land fairly close to the parent colony These bees seem to instantly forget about their old home especially the nest searching scouts. The main body just hangs there.

After some time the nest scouts return to the cluster and make some kind of agreement, as to where this swarm will go and the whole bunch takes wing, led by the scouts. If for some reason they can't make it to their final destination (probably wind) they will recluster Now these scouts have to forget about the first location and remember where this new location is. Also they have to remember where the future home is. This process might go on several times, with each move remembering and forgetting. I find this quite fascinating! Then when they finally reach their new home, all other places are forgotten.

If on the other hand you were to move a hive 50 or so feet most foragers would return to the old stand. Maurice Maeterlinck explained this in his book *The Life Of The Bee* – 1901 by simply stating its the "spirit of the hive." I guess that's as good an explanation as any?

Now this has nothing to do with cell phones G.S.M DSM-V etc. I was skeptical when this theory first surfaced for the simple reason yellow jackets, hornets, wasps and bumble bees would be the first to decline, seeing as one bee (queen)

starts the nest in early Spring and also surmising that these bees use the same system to navigate as honey bees do. Just think about it. She picks a nesting sight then can't return to it, good bye!

There are some that say these bees are also in decline. I haven't noticed it in this part of the country

I'm sure I'm over simplifying the issue but that's just me – simple.

Jim Cowan
Aberdeen, WA

## Anise Hyssop

I know this sounds like a broken record but I must join in saying first of all how much I thoroughly enjoy reading *Bee Culture* magazine. Now, I'm writing today for two reasons. First, in reading the March 2009 edition of *Bee Culture* I was very interested in the information given on the Anise Hyssop. It stated that "two and a half acres of anise hyssop are sufficient forage for 250 hives of bees." The information given on page 522 of *The Hive And Honey Bee* has the same quote from Frank Pellett regarding it as a "wonder honey plant." However, on page 430 of *The ABC and XYZ of Bee Culture* it states that "This herb has a stunning reputation as a honey producer, but so many plants are needed to produce a crop it is generally inefficient to use." I'm a little confused here and would ask if someone could please clarify this a bit more for me. I would appreciate it. I waited until the May edition to come out thinking certainly someone else would have written but, I guess it's just me the beginner

The second reason is I'm writing from a prison on Maryland's Eastern Shore and I am seeking (ok begging) for someone to solicit the prison regarding the implementation of an apiculture class. I have given it a lot of thought and I honestly believe that this venture can be very profitable. My only goal is to get my hands on some bees so I don't have to be just a beekeeping bookworm for the next two+ years. Please contact me if you are even a little interested. Thank you and may God bless the honey bee!

William Dickinson, E.C.I. 290682
30420 Revells Neck Road
Westover, MD 21890

## Dead & Dying Bees

Can you help me? For the past four days there have been hundreds of bees dead or dying on my patio. I believe there is a nest in a tree by the house. I suspect it is Colony Collapse Disorder The ones that are still alive stumble and stagger around, sometimes spin in circles, or fly erratically It is a huge nuisance. I have not been stung however

Please advise what I should do.

CC Smith
Glendale, CA

***Editor's Note:*** *What you describe sounds exactly like those bees have encountered a pesticide application from a nearby farm. Especially the stumbling and staggering and spinning behavior you note. Very probably all the bees will be dead in a few days, though it will take some time for all of them to die. It's not CCD however, but it is, as you note, a nuisance. Short of finding the nest and closing it up I'm afraid there's not much to do ... You may, however, try and find the farmer and tell him that he has violated the law in that he sprayed a blooming crop and killed bees. And if the crop is that close, did you, too, perhaps get a small dose of this stuff? I hope not...you see what it can do.*

## Likes Walt Wright

I like your magazine, particularly Walt Wright's incisive and thought provoking articles. Since I live in the mountains of Northeast Pennsylvania I would like to see more articles on Northern beekeeping.

Bob Helmacy
Hop Bottom, PA

## No Nectar

This is the third year in a row that I have sent a letter to the editor of *Bee Culture* about the fact that

trees are not producing nectar The first year, after many years of watching, the tulip poplar has not produced any nectar. It is not just honey bees but there are no insects whatever around any of the blossoms. The second year, after watching for a number of years, I have found that the black locust is the same. Our third best nectar is the holly tree. I have watched the holly for the past three years and it is not producing any nectar just as the tulip poplar and black locust.

I have been vigilant in my observations. Over the years I have ruled out many of the normal things we think about: too wet, too dry, other plants in bloom, rainy, no moisture in the soil, different times of the day, too windy I pulled a blossom off of the tulip poplar; no nectar in the bloom. I did the same with the black locust; little moisture.

The tulip poplar is in full bloom now. The black locust is drying up. The holly is coming out. (May 14th) Since this is the middle of our honey flow and our three most prodigious producers of nectar in the past are not producing then I think my honey crop will not be much. So far I have no answers to what is happening. With so many other things going on there are few people who would even be interested in some beekeeper who thinks something is wrong because there is no nectar The trees leaf out, bloom and otherwise look normal. I just know that what I have written is happening in southern Maryland.

Bill Bartlett
Leonardtown, MD

## Dadant's Not Pleased

*The following (slightly edited) letter was sent to us by Dadant's concerning a letter published in the June issue. Shortly after, Mann Lake conveyed similar sentiments regarding the comments made about their products. Please see our response at the end.*

We don't know Mr Dave Meldrum of Andover, MA, but the portion of his letter to the Editor in the June Bee Culture regarding the quality of woodenware and CCD is a total fabrication. Everything he said about a lawsuit initiated by, or any quotes attributed to Dadants is totally untrue.

We don't know about the people at Mann Lake, but we would think they would be upset as well if Meldrum's statement about them recalling woodenware due to CCD fears is also a fabrication.

This type of rumor can hurt a company's business and reputation. Perhaps this letter was meant to be funny or tongue-in-cheek, but it should have been noted as such at the beginning.

***Editor's Response**: The letter sent in by Mr Meldrum was offered as a light hearted look at the term colony collapse...in his humorous view meaning the failure of beekeeping woodenware rather than the sudden and complete*

*death of a colony. Specifically he mentioned the woodenware of both the Dadant and Mann Lake organizations in his letter Colony Collapse Disorder is a malady that affects honey bees that has been associated with among other things nutritional, mite, disease and perhaps viral stress. Woodenware obviously has nothing to do with Colony Collapse Disorder Certainly during my tenure here I've not heard any comments about the woodenware of either company and in fact, both have made great strides in improving the quality and cost of our most expensive investment. Moreover, both the Dadant and Mann Lake organizations have led the industry in making available products for beekeepers that are successfully combating the nutritional, mite, disease and other problems our bees are having. They both are to be commended in their endeavors to help beekeepers.*

*To be clear, woodenware produced by Dadant, Mann Lake, or any company in this industry, has not been reported to be collapsing, nor is woodenware in any way, from any company contributing to the malady our honey bees are suffering from known as Colony Collapse Disorder I apologize for any misunderstanding.*

# INNER COVER

OK, I have trouble with queens. But then so do most beekeepers. She's the linchpin in the operation. She may not be in charge but without her the whole thing falls apart. There's a whole chemistry set of pheromones she constantly unleashes to keep her minions in line (isn't that being in charge?). When the queen is doing good they can't lay eggs, they keep focused on what's going on and what needs doing, they respond to changes in the form of swarms, revolution, or a simple retirement. There's more going on with queens than we think about. All the time. She's not just laying eggs you know. That would be too easy

When queens get old pheromone production changes and as a result the behaviors of the workers change too. There's something like 19 (and probably more) distinct chemicals she's responsible for that work alone or in communion with other chemicals and compounds she produces to make all this happen. For instance: Compound A instigates something expected – say retardation of ovary development in workers. But when compound A hooks up with chemicals C and F, which she also produces, the result is compound Y, which induces an altogether different behavior in the workers – say it's the urge to form a retinue so that the essence of queendom is felt all over the colony all of the time. You can see that when production of compound A begins to diminish with age all manner of behaviors are affected and the colony as a whole can be enhanced...think swarming and reproduction (good for bees, maybe not so good for beekeepers)...or diminished...think no more retinue behavior and the sense of having a queen goes away and supercedure behaviors begin to take over Moreover, as the queen ages some compounds diminish earlier than others, so some worker behaviors go on as before while others dwindle or disappear Think of this as an orchestra, with all the different chemicals our lady bug produces as all the different sounds needed to play the music – all the sections need to be in place, in tune, on beat and playing full strength for the concerto to be right. Reduce or enhance one or more and the whole thing falls apart.

As subtle and silent as these queen-produced, regimenting chemicals are, imagine what happens when we introduce...take your pick: mite control chemicals that saturate the air with an overwhelming, over powering aroma that fills the hive with nowhere to go and no escape. Or worse, fill the wax with tissue damaging, behavior changing, baby killing residues that have tiny affects we can't measure or see. It's only when the bees are finally gone that we can add up the metric of death we have inflicted. Even something as benign as a whiff of burning pine needles or corncobs disturbs and disorients the masses for a bit...some say a day, others are sure it's longer

That the communication within isn't destroyed beyond repair when these things happen is amazing. Our bees are remarkably resilient, aren't they? Still, perhaps we should examine again those things we do to our bees on a routine basis to see if there are alternative measures we could be taking to ease these burdens. These are the stresses we put on our bees that we do have control of.

But there are more, which is where I started way back when.

On occasion a working, active, healthy and prosperous queen is injured even before becoming a queen, or while on duty in your backyard. It could be something as simple as sliding a frame back in and pinching one of her tiny feet between bottom bar and the side of the box as she is running around the edge of the frame to escape the light. Or, when examining a colony you not-so-carefully lift a frame and catch her Royalness between the frame that rises and the one next door that doesn't. This could be a wing fracture, leg removal, or simply a slightly squishy wound at the very tip of her abdomen, where the eggs emerge. None of these are immediately life threatening, and our queen simply limps away, seemingly little worse for wear

But bugs don't heal much. They don't have clotting, they don't have stitches or transplants or scar tissue to speak of. Wound a bug and she dehydrates through the wound, gets infection or can't compete in a world of bugs like her that can. She'll starve, freeze, bleed to death (would that be hemolymph to death?), become disoriented and unable to fly, walk or function. An injured bug is, most times, a dead bug pretty soon.

So it goes for our queen.

You may not be aware of the tiny injury she just received and it will take days for her to die, and longer for her to be replaced. And the next time you visit your hive, all you find are supercedure cells, or no eggs, or laying workers, or ... well, what you find is lots of information on what is going to happen next...but little on what happened just recently Did she die because of you, because of something you did, because she was old, because she was poorly mated, because bees just die sometimes? Why? Why not?

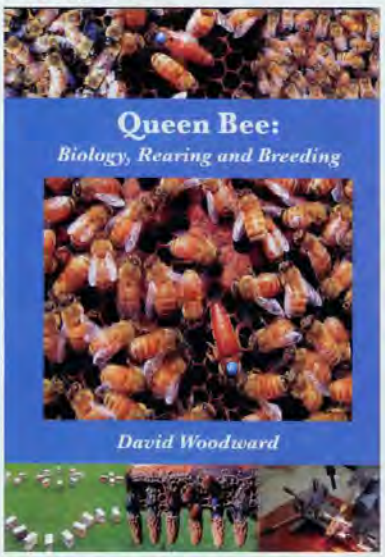
The management issues that arise with this discovery can be as complicated as the now-missing compounds your queen used to dispense with ease. Now you have to change the direction the bees in the colony have chosen so that what happens next ensures their survival, and yours. You must organize the action so they accept a laying queen and

*Continued on Page 13*

## Queens

# GOOD SUMMER READING –

*Queen Bee: Biology, Rearing and Breeding*, by David Woodward (New Zealand). 6¾" x 9½", 137 pages, color throughout, soft cover $36.00 includes post. ISBN-9780473119331 Available from **www.GroovyCart.co.uk/beebooks** where payment may be made by Pay Pal or by email to **sales@recordermail.demon.co.uk** for those wishing to make check payments

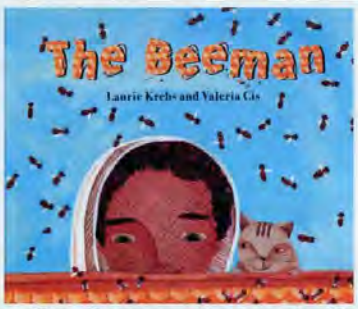



This book is exactly what it says it is...all about queen biology, rearing and breeding. It is basic in the information it presents, but covers an extraordinary amount of information in is few pages. Excellent photos go a long way in explaining the techniques involved. There are only three chapters. The first is on Queen biology .and you absolutely need to know this before you progress. Actually, it has some sound information on honey bee biology It may be a bit fundamental for some, especially if you are serious about queen production, but it's good to have it all in one place if you need a reference.

Chapter two is actual queen rearing. It covers the equipment needed, including grafting tools, Cloake boards, incubators, cages, and cages. It looks indepth at the grafting technique, using double grafting, Cloake boards and pest control. Then it covers mailing, banking and other fundamentals that need to be done well. After a section on swarming and nuc making it has a section on nutrition that all beekeepers would do well to read.

Chapter three covers all aspects of breeding, starting with the basics of honey bee genetics, then stock selection and breeding programs. Instrumental insemination is covered in detail with good photos and drawings and trouble shooting. A thorough set of II equipment photos is included.

If you raise queens, or are thinking of it, this book should be in your library



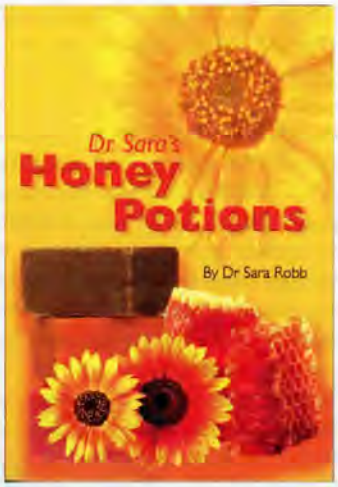

*The Beeman*, by Laurie Krebs and Valeria Cis. 10" x 10" Hard cover, color throughout, 43 pages. ISBN 9781846861468. Published by Barefoot Books. Available from the publisher or in book stores everywhere.

This delightful children's book is about a grandfather, the Beeman, who is a beekeeper teaching his grandson all about bees and beekeeping. The style is perfectly suited for small children as a read along or just to listen to. It was written by the Beeman's wife, so the information is first rate and every bit correct. This is just one page...

> "Here is the queen bee,
> Who does her job well,
> And lays tiny eggs
> In a six-sided cell.
> She's the heart of the hive,
> says the Beeman."

The book takes you through a season, quickly, and ends with easy to understand lessons on bees, bee colonies, queens, workers, drones. And beekeeping and beekeepers, and beekeeper's tools – hives, frames and cells, smokers, hive tools and extractors. There's a page on honey, pollination and bee dancing, too. And finally, a recipe for honey muffins, made by yes, grandma. And there's a cat, somewhere, doing something, on every page. What's a beekeeper without a cat?

Laurie Krebs and her husband the Beeman will be at the EAS meeting this Summer in Ellicotville, NY, selling their book, and talking about bees. Be sure and visit. ➢




*Honey Potions*, by Dr Sara Robb. 6½" x 9¾" 121 pages. Black and whiter throughout. Soft cover ISBN 9781904846369. $19 includes post. Available from **www.GroovyCart.co.uk/beebooks** where payment may be made by Pay Pal or by email to sales@recordermail.demon.co.uk for those wishing to make check payments.

This is yet another in the collection of how to make lotions and potion and cosmetics and soaps using honey, beeswax and other compounds. It is like, yet unlike all the rest. Dr Robb's recipes are similar to, but many are just a bit different from others you will find, and she is extra careful when making recommendations on ingredients, mixing instructions and how to use the finished products.

Bath bombs, bubble bath, honey bombs and honey hearts, flavored balm bases and flavored kisses are the first half of the book, but it's soap recipes that take up the rest, and there are a lot of them. Basic recipes get you started, but it's the fancy recipes that keep you going. Lavender, Honey bee, Orange Blossom and Carrot, Nut & Honey, Rose Hip and Honey and Avocado Spa... all are soap recipes that sound good enough to eat.

# MORE SUMMER READING –

*The Honey Spinner,* by Grace Pundyk. Published by Murdoch Books. ISBN 9781741960884. 336 Pages. About $30 In the U.S.

Opening "The Honey Spinner" by Grace Pundyk is like opening a gorgeous flower, petal by petal, page by page, photo by photo. The dust jacket alone is worth the price of admission. Pundyk's travel narrative is compelling because so much information about global honey varietals is revealed. Like the title's metaphor however, so many ideas are circulated that a novice beekeeper may be overwhelmed by its lovely lucidity


The travel narrative is arresting for Pundyk's choice in places and types of honeys But since Pundyk is not a beekeeper, she raises compelling questions about the intricacies of honey exports, colony collapse disorder, genetics, and politics, only to leave them hanging in an effort to explore questions generated by travel experiences (i.e., was her Russian friend's anger valid or not, was the custom official being too picky or not). Pundyk's letters regarding her family's traumatic history takes this narrative to a more sublime level than traditional "bee" travel tales, although they tend to lead the reader away from the primary topic regarding honeys. So at times, this book reads like two travel narratives, one personal and one just touching the surface of the political entanglements of global honey trading and beekeeping in the 21st century

Some of this conflict may just be the "nature of the beast." The complexities of the contemporary honey industry defy any systematic attempt to classify them, and those complexities are compounded if one considers international issues.

Consider for instance, what happens to a poor developing country when the European Union changes its honey standards. On one hand, defining honey standards raises the bar for all beekeepers. But if those standards are so "set in stone" and defined by people unfamiliar with global landscapes, then developing honey markets can be suspended and beekeepers that need financial support of the European Union are effectively eliminated from participation in the global economy

Another issue addressed is Chinese honey contamination. To her credit, Pundyk does her best to allow all sides to express their views (interviewing Nicola Bradbear, Richard Adee and Donald Smiley among others) but she does so primarily in interviews, with little in the way of thorough analysis and possible resolutions.

That said, Pundyk's conclusion is perhaps one of the most solid, creative, original beekeeping narratives that exists in contemporary publications. Harkening back to the Aristaeus myth, Pundyk updates the myth to a contemporary landscape. While the previous chapters are entertaining and informative romps in the Russian landscape, Yemeni deserts, Australian outbacks, etc., the Aristaeus conclusion is easily the best exploration done by Pundyk in my opinion. I dare not give away the structure of the conclusion for fear of dulling the joy of exploration for other readers, but suffice to say, this conclusion "works" because Pundyk steps away from her experience to create a fictional perspective of another beekeeper and his journey It is here that she best illustrates her thesis that a combination of arrogance and ignorance is to blame for our current dilemmas.

Suffice to say, though, that in this modern retelling of the bee myth, Pundyk clearly implies, there can be no blame attributed to the gods or goddesses. This dilemma has been caused by humans, especially those in the 20th and 21st centuries. Her conclusion is a pointed but optimistic tribute not just to honey, but to those concerned individuals working to resolve the myriad of problems facing bees.

*Tammy Horn*

# New Small Hi

The only good thing that can be said about small hive beetles is they are easy to see. You don't have to use sticky boards or a magnifying glass to find them. If you have hive beetles, you will see them running on the frames, the cover, the bottom board, and the combs. We have the misfortune in southeast Arkansas to be in an area heavy infestation. Some members of our Beekeeper's Association have lost hives because of the beetles.

We tried chemicals and a ground drench, but these had little effect on the beetle population. We then tried every trap on the market. All the traps caught beetles – some caught more than others.

Since traps seemed to work better than chemicals, I began trying to develop a new trap that would be effective and not too hard for some-


**For More Information and Pricing Contact**

**Jerry Freeman**
**528 E. Wilcoxon Street**
**Hamburg, AR 71646**
jfreeman1944@yahoo.com

**870.853.2412**
or visit

**www.freemanbeetletrap.com**

# ve Beetle Trap

one with stiff, clumsy fingers to deal with. You can see from the picture the trap is simple – an oil tray under a screened bottom board. The tray is inserted at the back of the hive. No attractant is needed. The bees will chase the beetles into the oil!

**INSTALLATION**

The hive has to be leveled before the trap can be installed, but we've added a 'hive leveler' to make that easy

Either vegetable oil or mineral oil can be used. I have found I can get used cooking oil at any of the local stores that cook every day Restaurants and convenience stores are happy to give you jugs of oil that is already filtered – for free! It's a little brown, but it works just fine. If you want to do *Varroa* mite counts, use clean new oil or Vaseline.

**For Heavy Infestations:**

- Significantly decreases the beetle population in the hive
- Easy rear access for checking and cleaning the tray without disturbing the bees
- Can be used as a screened bottom board
- Costs about the same as one order of chemicals, but much more effective
- One inch deep tray allows six to eight weeks between cleanings if necessary
- Catches a lot of *Varroa* Mites
- Tray can be used as a sticky board
- Most areas have used cooking oil available FREE!

***Inner ... Continued From Page 10***

that queen hits the road running so there's no break in the production of brood and the colony continues...to make honey, to make brood, to get ready for winter, to ... to do whatever it is it is supposed to be doing.

OK, back just a little bit further

Last year I was marking a queen. I had her on the kitchen table, figuring in the unlikely event she got away she'd go to the window and I'd simply lift her off the glass and finish the job. She was a squirmy queen. And feisty And, yes, she got away and headed straight for the window, just as I had predicted. What I hadn't predicted was the extraordinary jumping ability of the relatively new kitten and in a half a second that $20 bug was cat food. OK, my bad.

When word got around that I was feeding my cats queen bee paté, some wisenheimer sent me one of those queen muffs made by Brushy Mountain. Did you know a queen can get caught in the folds and get squished in one of those? I didn't either They are good for what they do, but you have to be careful with those things. Nevertheless, that one didn't fly away Actually, she didn't fly at all after that.

I've watched my friend Buzz pull a queen out of her cage, mark her, get rid of the other bees in the cage and stick her back in, one handed no less, in 12 seconds flat. That should be a bee meeting game I think. Winner gets to keep any of the queens still alive.

The rest of the queen-marking year went OK...not 12 seconds, but no dead or devoured queens either This year I was feeling pretty ummm, over confident is probably the best choice of words here. So when I had to start two nucs for observation hives. .no problem. I always put them on the front porch so they're close and protected. I set up the first nuc and was ready to mark the queen. She was in one of the California min-cages without any friends...off with the staple, let her walk out, grasp her wings, go for the feet...and she stung me, twice, right under the finger nail. I flinched. She flew. No, the porch isn't enclosed. Into the bushes. A $20 bug gone with the wind. Dang bug.

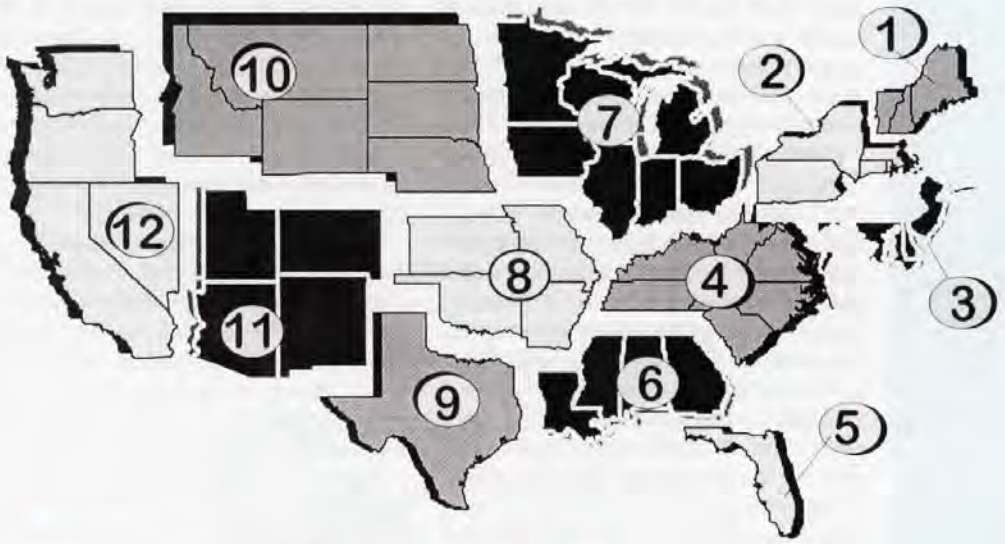
One down. .still one to go. I learned my lesson. Back inside. Cats outside. Same procedure. I've done this dozens of times, OK. Pull the staple, let her walk out, grab the wings go for the legs....no wiggle, no squirm, no frantic twisting and turning. Nothing. She tips over Out like a light. Did I do something? Squeeze a delicate spot? Pinch a sensitive organ? Scare her to death? Good grief! Give a beekeeper a break!

No, she's moving...twitching an antenna. Wiggles a leg. Mouth parts moving. The old girl simply fainted. Too much drama for such a young lady But I'm not gonna let her go. Grab those wings and legs. .just ready to put a spot on her thorax and...she shudders and shakes and jumps and the spot goes on her abdomen, no, on the left side of her thorax, not the top. I've still got her though. Back in the cage. Staple on...watch her move. Both wings on the left side straight up. Is she going to die? Will the bees kill a queen who can't keep half of her wings down?

Meanwhile, I had left the cage the first queen was in on the table on the porch. Twenty minuets later she flew back, crawled in and was waiting when I returned. She didn't sting this time, didn't wiggle, or squirm. She just sat there with sort of a defeated look on her pretty little face. She seemed unharmed but dejected, but who knows. We'd had quite a tussle. I got her in the box. And by now the other one had lowered her wing. She seemed fine too. The bees will tell me though. A damaged queen has a death sentence from a colony. They have no mercy

It's July...the season's more than half over for some of us, just getting started for some of us, and all of us need to keep our hive tools sharp and smokers lit...and be careful out there with those queens, OK?

# JULY – REGIONAL HONEY PRICE REPORT




## How are prices doing?

We thought it would be worthwhile to take a mid-year look at how prices are doing this year in July compared to last year in July. This month tends to be a changling month, since old crops are about gone, new crops still coming in, but beekeepers and packers already have a feel for what the crop will be, and what the prices may be. These, in turn, influence what our customers see from other suppliers.

Bulk honey, in barrels, is up only a bit from last year, less than a nickel for light darker more than light, about 15 cents, so far. Interestingly, light is up about 50 cents from two years ago, and 45 cents for dark.

Pails up $10 for both light and dark which is refreshing that's 16 cents a pound there. Additionally, they are up $5/pail from two years ago. We are seeing an increase in pail prices, and, interestingly, an increase in pail sales from larger honey producers to smaller operations. This is good for both groups. The big guys get a better price, and the smaller guys get to stay in business. Sweet.

Wholesale prices are almost all, but not quite all, up since last year. Half pounders are up 10%/case, 1 pounders up $5/case, 2 pounders up 10%/case, or about $8. 12 oz. plastic up about $5/case, and quarts up about $7/case. Pints, however, are down a few bucks a case since last year. Their popularity is waning, only because some retailers have a harder time selling them due to their weight. Home sales and farm market sales of both pints and quarts still strong though.

Retail sales about the same with most up, some down. Half pounders are up 40 cents, and plastic up about 20 cents, 1 pounders up just a little at a dime, but 2 pounders up a quarter (jar prices are responsible for a lot of that we hear). Interestingly, retail pints are up just over 50 cents, but retail quarts down a quarter. 5 pounders up a buck, creamed up 50 cents, fancy cut comb up 85 cents and Ross Rounds up 33 cents.

Wax prices increasing pretty good in the last year, with light wax up just over 80 cents a pound, and dark wax 70 cents a pound. Healthy for both.

| | REPORTING REGIONS | | | | | | | | | | | | SUMMARY | | History | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Range | Avg. | Last Month | Last Year |
| **EXTRACTED HONEY PRICES SOLD BULK TO PACKERS OR PROCESSORS** | | | | | | | | | | | | | | | | |
| 55 Gal. Drum, Light | 1.60 | 1.62 | 1.60 | 1.48 | 1.60 | 1.65 | 1.55 | 1.60 | 1.40 | 1.60 | 1.40 | 1.65 | 1.40-1.65 | 1.56 | 1.50 | 1.53 |
| 55 Gal. Drum, Ambr | 1.42 | 1.35 | 1.42 | 1.32 | 1.42 | 1.43 | 1.54 | 1.42 | 1.30 | 1.42 | 1.23 | 1.65 | 1.23-1.65 | 1.41 | 1.37 | 1.26 |
| 60# Light (retail) | 139.33 | 131.33 | 130.00 | 121.00 | 139.33 | 127.50 | 126.20 | 125.00 | 130.00 | 139.33 | 142.50 | 148.00 | 121.00-148.00 | 133.29 | 129.24 | 123.22 |
| 60# Amber (retail) | 134.64 | 126.67 | 130.00 | 118.53 | 134.64 | 122.50 | 120.00 | 125.00 | 100.00 | 134.64 | 132.50 | 147.33 | 100.00-147.33 | 127.20 | 121.81 | 118.75 |
| **WHOLESALE PRICES SOLD TO STORES OR DISTRIBUTORS IN CASE LOTS** | | | | | | | | | | | | | | | | |
| 1/2# 24/case | 67.01 | 61.98 | 55.80 | 55.64 | 67.01 | 54.00 | 47.00 | 67.01 | 67.01 | 42.00 | 67.00 | 89.67 | 42.00-89.67 | 61.76 | 55.57 | 53.96 |
| 1# 24/case | 60.00 | 78.28 | 84.00 | 66.36 | 94.76 | 87.00 | 73.44 | 88.80 | 60.00 | 94.44 | 80.27 | 99.20 | 60.00-99.20 | 80.55 | 79.04 | 74.33 |
| 2# 12/case | 75.79 | 74.72 | 79.80 | 57.49 | 75.79 | 66.00 | 63.76 | 78.00 | 52.00 | 69.24 | 70.00 | 82.70 | 52.00-82.70 | 70.44 | 66.84 | 62.18 |
| 12.oz. Plas. 24/cs | 74.43 | 71.98 | 50.40 | 66.94 | 74.43 | 63.00 | 58.32 | 78.00 | 54.00 | 53.28 | 67.77 | 71.15 | 50.40-78.00 | 65.31 | 60.31 | 60.46 |
| 5# 6/case | 72.00 | 83.99 | 78.00 | 66.70 | 82.29 | 90.00 | 75.40 | 96.00 | 66.00 | 74.82 | 78.00 | 92.00 | 66.00-96.00 | 79.60 | 76.12 | 74.55 |
| Quarts 12/case | 103.94 | 110.88 | 103.94 | 99.03 | 103.94 | 89.40 | 94.00 | 105.00 | 103.94 | 104.52 | 95.94 | 118.67 | 89.40-118.67 | 102.77 | 103.00 | 95.88 |
| Pints 12/case | 64.85 | 56.95 | 64.85 | 68.40 | 64.85 | 51.00 | 61.50 | 72.00 | 64.85 | 53.00 | 66.00 | 68.67 | 51.00-72.00 | 63.08 | 61.03 | 65.07 |
| **RETAIL SHELF PRICES** | | | | | | | | | | | | | | | | |
| 1/2# | 3.00 | 3.40 | 3.09 | 3.14 | 3.77 | 2.75 | 2.78 | 3.77 | 3.77 | 3.00 | 3.09 | 5.00 | 2.75-5.00 | 3.38 | 2.97 | 2.87 |
| 12 oz. Plastic | 3.82 | 3.96 | 3.86 | 3.74 | 3.82 | 3.67 | 3.27 | 4.50 | 3.00 | 3.24 | 3.93 | 4.58 | 3.00-4.58 | 3.78 | 3.79 | 3.59 |
| 1# Glass/Plastic | 3.75 | 4.49 | 5.22 | 4.66 | 5.47 | 4.67 | 3.86 | 5.00 | 4.00 | 4.54 | 4.73 | 5.75 | 3.75-5.75 | 4.68 | 4.72 | 4.65 |
| 2# Glass/Plastic | 9.25 | 7.65 | 7.22 | 6.55 | 8.09 | 7.00 | 7 14 | 8.50 | 6.00 | 7.04 | 6.86 | 9.31 | 6.00-9.31 | 7.55 | 7.95 | 7.30 |
| Pint | 8.18 | 6.42 | 8.18 | 6.83 | 6.00 | 5.50 | 8.44 | 6.75 | 8.18 | 10.00 | 5.98 | 9.00 | 5.50-10.00 | 7.46 | 6.90 | 6.93 |
| Quart | 9.73 | 9.48 | 9.73 | 9.63 | 9.73 | 9.42 | 9.70 | 12.00 | 9.73 | 10.63 | 9.37 | 14.25 | 9.37-14.25 | 10.28 | 10.75 | 10.51 |
| 5# Glass/Plastic | 17.00 | 15.79 | 20.45 | 15.12 | 16.36 | 12.75 | 17.02 | 19.00 | 18.00 | 15.55 | 16.30 | 22.50 | 12.75-22.50 | 17 15 | 18.53 | 16.28 |
| 1# Cream | 5.25 | 5.80 | 5.90 | 5.56 | 5.90 | 4.50 | 5.62 | 5.90 | 5.90 | 5.55 | 5.50 | 6.66 | 4.50-6.66 | 5.67 | 5.12 | 5.16 |
| 1# Cut Comb | 7.56 | 5.71 | 6.50 | 5.84 | 7.56 | 5.13 | 6.85 | 7.56 | 7.56 | 7.56 | 9.67 | 8.50 | 5.13-9.67 | 7 17 | 6.78 | 6.32 |
| Ross Round | 6.83 | 5.35 | 6.50 | 5.60 | 6.83 | 5.00 | 6.33 | 6.50 | 6.83 | 6.83 | 6.75 | 8.50 | 5.00-8.50 | 6.49 | 6.26 | 5.99 |
| Wholesale Wax (Lt) | 4.25 | 3.92 | 3.25 | 2.86 | 5.55 | 5.00 | 4.68 | 4.00 | 3.35 | 4.15 | 3.00 | 3.08 | 2.86-5.55 | 3.92 | 3.52 | 3.17 |
| Wholesale Wax (Dk) | 1.50 | 3.45 | 3.25 | 2.57 | 4.41 | 4.33 | 4.30 | 4.00 | 4.41 | 4.41 | 3.32 | 3.10 | 1.50-4.41 | 3.59 | 2.89 | 2.76 |
| Pollination Fee/Col. | 82.99 | 85.00 | 70.00 | 47.29 | 82.99 | 49.67 | 52.33 | 60.00 | 82.99 | 82.99 | 25.00 | 105.00 | 25.00-105.00 | 68.85 | 76.78 | 81.12 |

# a closer look

# DRONE SPERM

Clarence Collison

## Drone semen has remarkable longevity compared to other animal species.

Drone semen has remarkably good longevity compared to other animal species. Once deposited in the queen's spermatheca, spermatazoa remain viable for the duration of the queen's life, up to five years (Taber 1954, Verma 1974, Weirich et al. 2002). The mechanism by which drone sperm are kept viable in the spermatheca is explained in part by special antioxidants present in the spermatheca of a mated queen. These antioxidants prevent the oxidation (deterioration) of spermatozoa by converting harmful free radicals to waste products. Furthermore, spermatozoa experience a decreased metabolism and mobility while being held within the queen's spermatheca, which also slows the process of degeneration (Weirich et al. 2002).

A honey bee spermatozoan measures 250-270 µm in length (Lino-Neto et al. 2000), and consists of the DNA-containing "head" and the mobilizing "tail." The head of the sperm is made up of an acrosome and a nucleus, and measures 5 µm long, 0.5 µm wide and 0.3 µm thick (Lensky et al. 1979). The acrosome is an anterior cap which produces enzymes that allow the sperm to penetrate the outer membrane of the egg. The flagellum (tail) is the motor of the spermatozoan and is comprised of the axoneme, two mitochondrial derivatives or strands (for energy production), and two triangular accessory bodies (Lino-Neto et al. 2000). The axoneme forms the central portion of the tail, and the mitochondrial derivatives run along either side from the base of the nucleus nearly to the end of the tail (Rothschild 1955); the tiny accessory bodies are sandwiched between the axoneme and the mitochondrial derivatives.

Energy metabolism is essential for all living cells, and the intracellular pathways delivering ATP (adenosine triphosphate, molecules of energy) are adapted to the cell environment, its function, and the source of fuel that is available. For honey bee spermatozoa, carbohydrates appear to be important for ATP production, and the two long mitochondrial derivatives suggest aerobic metabolism (Blum and Taber 1965). The advantages of carbohydrates are that ATP can be produced from them in the absence of oxygen (anaerobic metabolism), and they can be stored intra-cellularly as the polymer glycogen. A second energy store is phosphoarginine. It is used for rapid ATP regeneration during activity, or for the intracellular transport of energy-rich phosphate.

The total number of spermatozoa extracted from the spermatheca of a freshly mated queen varies between one to eight million (Koeniger and Koeniger 2000, Cobey 2007).

As one would expect, the number of sperm in the spermatheca decreases significantly over time as the queen utilizes her stored semen to fertilize her eggs. Al-Lawati et al. (2009) found that, on average, one-year-old queens contained only 38%, and two-year-old queens only 21% of the sperm found in freshly mated queens. The difference in sperm counts between one-year-old and two-year-old queens was not significant according to this study

"It is very difficult to recreate the delicate environment of the spermatheca for in vitro storage of drone semen."

The movement pattern of the spermatozoa stored in the spermatheca also changed significantly with queen age (Al-Lawati et al., 2009). Lensky and Schindler (1979) observed that sperm of newly mated queens performed only a circular movement pattern, but sperm from two year-old queens move only in a straight direction. Both types of movements were observed in stored semen from one-year-old queens: 75% of the sperm moved in a straight line and 25% moved in a circular pattern. Also, the speed at which sperm moved differed significantly in relation to storage time in the spermatheca; the sperm sampled from two-year-old queens moved significantly slower than the sperm of freshly mated and one-year-old queens. A difference in sperm speed between one-year-old queens and freshly mated queens was not found, and motionless sperm were only found in two-year-old queens.

Al-Lawati et al. (2009) also evaluated enzymes from the spermatheca of 75 queens of various ages (zero to two years), virgin queens and semen samples taken from 46 drones.

Maximum activities of the four enzymes characterizing energy metabolism--lactate dehydrogenase

*Massed, intertwined spermatozoa.* (Erickson photo)

(LDH), glyceraldehyde 3-phosphate dehydrogenase (GAPDH), citrate synthase (CS) and arginine kinase (ArgK)--were found in fresh semen of drones, and in the spermatheca of mated queens. The spermatheca of one-week-old virgin queens showed low enzyme activities and an absence of LDH and GAPDH activity, but the latter enzymes were synthesized in the spermathecal tissue of one-month-old queens. The activities of all the studied enzymes are fairly constant in queens within one year after mating, indicating good conservation of the capacity to produce ATP However, after two years the LDH activity increased, GAPDH activity was not significantly different, and CS and ArgK activities decreased significantly The results suggest considerable changes in the energy metabolic profile of the spermathecal tissue, the sperm, or both during sperm storage. However, more research is required to understand which of the metabolic pathways characterized by these enzymes are primarily used for ATP production in stored sperm.

Weirich et al. (2002) studied the production and activities of the antioxidant enzymes catalase (CAT), glutathione-S- transferase (GST), and superoxide dismutase (SOD) in spermatozoa and spermathecae. These enzymes can increase sperm longevity by converting harmful reactive oxygen species ROS (hydroxyl, hydroperoxyl radicals and hydrogen peroxide) to benign waste products. Of the three enzymes, only SOD is found in drone semen, CAT and GST are evidently produced in the spermatheca or spermathecal gland of mated queens. In agreement, Collins et al. (2004) have found catalase transcripts particularly in the reproductive tissues and semen of male and female honey bee, thereby providing further evidence of antioxidative protection. Kraft et al. (1978) have performed a comparative analysis on sperm $CO_2$-production and found that glucose consumption during spermatozoan respiration is relatively low compared with sperm of other animal species. Nevertheless, the sperm retain their respiratory activity during storage, which presumably involves a high risk of oxidative damage (Weirich et al. 2002, Collins et al. 2004).

The chemical environment of the spermatheca plays a large role in maintaining quality and longevity of stored sperm. Verma (1973, 1974, 1978a,b) found that the concentrations of sodium ($Na^+$) and potassium ($K^+$) in the spermathecal fluid are important factors for sperm motility and longevity both *in vivo* (Latin: in life; experiments done in a system in which the organism remains intact) and *in vitro* (Latin: in glass; experiments done in a cell-free system). Klenk et al. (2004) reported a basic pH value of 8.6 and a high protein concentration of 8.5-15.3 mg/ml in the spermathecal fluid. The addition of exogenous amino acids (L-lysine, L-arginine, L-glutamic acid) and the enzyme, catalase, to spermathecal fluid was found to allow a great number of spermatozoa to survive in spermathecae for years (Verma 1978c).

It is very difficult to recreate the delicate environment of the spermatheca for *in vitro* storage of drone semen. Many methods of *in vitro* semen storage have been attempted at a range of temperatures, nutritive media and preservatives. Almeida and Soares (2002) experimented with storing semen in green coconut water, which contains arginine, lysine, sodium and potassium, all important ingredients for prolonging sperm motility and viability Even though semen was preserved at low temperatures (2-10° C), the viability of spermatozoa drastically decreased after two weeks of storage. Collins (2000)

found that sperm stored in a buffer solution at 12°C and 25°C had viabilities around 80% for the first six weeks of storage; by 32 weeks, refrigerated samples fared much better than those held at room temperature. Evidence supports cold storage of semen over room temperature or bee temperature (35°C) for better viability of sperm, but honey bee semen does not freeze as well as that of other organisms. One of the biggest obstacles to cryopreservation of drone semen has been high post-thaw mortality of spermatozoa. Taylor et al. (2009) have been developing a method of cryopreservation that has thus far produced a post-thaw sperm viability of greater than 60% for three strains of honey bees. The quality of thawed sperm has yet to be assessed in artificial insemination trials, as little information is available regarding the effect of long-term *in vitro* cryopreservation of sperm on its fertility If this technique proves successful in producing viable workers and reproductive queens through instrumental insemination, it will encourage the shipment of drone semen to queen breeders and increase the genetic diversity of their breeding stock. BC

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# *Varroa* In The Aloha State

Tammy Horn

## Inspections, Controls, Suppression, Funding, Surveys, Pollination, Management - Suddenly Everything Has Changed

The Hawaiian word for *fate* is *hopena*, and since the early 1900s, it's been a matter of *hopena* that *Varroa* mites would eventually come to the Islands. The inevitability increased in 2001 when APHIS/USDA forced Hawai'i to allow transshipments of queens and package bees from New Zealand to Canada to pass through its ports. Since *Varroa* arrived on Oahu in 2006 and on the Big Island in 2008, many agencies have been working together to create appropriate infrastructure to address the latest arrival. According to Hawai'i Department of Agriculture (HDOA) branch chief Neil Reimer, "Before *Varroa* showed up in Hawai'i, there was no honey bee program at the HDOA or the University These are now being developed. We are in the early stages of these discussions."

One such discussion was held in Hilo on April 25st, moderated by Senator Dwight Takamine. There was a good turnout of researchers from University of Hawai'i-Manoa (Oahu), Hawai'i Department of Agriculture, Farm Security Administration, and United States Department of Agriculture. Queen producers Gus Rouse of Kona Queens, Russell Olivarez of Big Island Queen, and Michael Krones of Hawaiian Queen Company shaped discussions regarding inspection programs. Organic honey producer Richard Spiegel of Volcano Island Honey addressed the need for non-chemical controls. Although these meetings have been held for two years, the April meeting focused on beekeeper concerns more so than the broader stakeholder concerns such as the flower and fruit industries, although macademia nut growers were in attendance.

Neil Reimer briefed the group on future funds allotted by the USDA. The immediate objectives are to establish a two-year apiary inspection program based on Mainland programs. The purpose will be to work with beekeepers to develop management practices, identify honey bee pests and diseases, and certify operations for export and movement of hives.

Another priority will be to develop surveys for *Varroa* and honey bee pests. This program will implement the national survey protocol developed by USDA for honey bee pests and establish a baseline on the pests not present in Hawai'i.

Because of the water barriers between the islands, a third priority will be to develop a suppression program. Currently, most Mainland beekeepers use chemical means to control the mite but these controls are short term solutions. In addition to these known controls, Hawai'i will promote non-chemical mite suppression techniques such as hygienic strains, organic controls, etc.

Since five of the seven Islands remain mite-free, a fourth priority will be to prevent spread to *Varroa*-free islands. This program involves the early detection, rapid response, containment, and eradication of incipient infestations of *Varroa* mites. Bee-free buffer zones around air and sea ports, prevention of movement of honey bees from infested areas, and rapid response to incursions to eradicate the infestation will be key components of the program.

And finally, a fifth element will be to support pollination services. Due to the decline in feral bee populations, beekeepers will be needed to pollinate fruit-and-nut orchards in *Varroa*-infested areas.

These goals are also being addressed by the University of Hawai'i (Manoa and Hilo) faculty Under Mark Wright's direction, UH-Manoa researchers are part of a concen-

*Big Island queen catching crew.*

*From left Tammy Horn with Richard Spiegel (Volcano Island Honey), Amanda Miller (5th generation Miller gal and with Big Island Queens), and Amy Perkins (Big Island Queens).*

trated two-year effort (July 2008 to June 2010) with a similar scope of services as those of the HDOA. UH will begin conducting mite surveillance programs statewide. It will also develop chemical screening for mite and honey bee control. A third component will focus on educational programs for honey bee producers to control the mite. A fourth will focus on early detection and rapid response programs to contain and eradicate new infestations of the mite on islands other than the island of Oahu, and finally, the university will provide "assistance in the establishment and maintenance of beeyards on Oahu for the production of honey bees and *Varroa* mite infested honey bees and hives for research purposes." In addition, Dr Ethel VillaLobos emphasized that UH-Manoa had started rearing queens, working with seed sets, and conducting graduate student research that can complement the Hawai'i Dept. of Agriculture. Because the goals of both branches are so similar, VillaLobos stressed the need for synergy between the state university system and the federal/state agriculture branches.

Even though UH and HDOA have overlapping goals, these programs are short-term salvos at *Varroa* mite control, not a sustained, long-term coordination of management and extension services. The programs are in their initial stages, although most commercial beekeepers such as Gus Rouse and Russell Olivarez would prefer funds not be diverted to "reinvent the wheel" when so many other states have established *Varroa* management programs. Indicating his desire that funds be appropriated for proactive programs, Rouse succinctly summed up the immediate impact *Varroa* will have on the commercial queen industry· "We will have to get used to the extra costs associated with varroa management. Queens will cost more because labor and maintenance will cost more."

Russell Olivarez, location manager of Olivarez Honey Bees, agreed with Rouse, strongly suggesting that the inspection people be hired as soon as possible in order to shape approaches to management and extension. But Olivarez, who has already worked with *Varroa* mites and queens on the Mainland, is as concerned about other factors such as *Nosema ceranae*. "Dealing with *Varroa* is an ever-changing set of dynamics. That's what changes the most about the beekeeping life is that one always has to stay on top of it. But with *Nosema ceranae*, we just don't know much about it."

Also no stranger to biological invasions, Michael Krones of Hawai'ian Queen Company concentrates on genetics. Krones had a honey production business in Costa Rica until 1984, but sold it after African honey bees changed the nature of beekeeping.

For the past eight years, Krones has been working with Joe Latshaw (Ohio State University) to develop hygienic queens in Hawai'i. Focusing on an Italian-Cordovan queen strain, Krones floods a local macademia nut orchard with his mating nucs. Using geographical isolation as a means of quality control is a key part of assuring his queen lines--and their hygienic tendencies – stay as "pure" as possible. Another control method Krones uses is liquid nitrogen to test hygienic behavior In the eight years that Krones and Latshaw have worked together he has been amazed at how quickly instrumental insemination has improved his stock and sees ongoing university collaboration as a crucial step to prepare for *Varroa* mite.

Giving voice to the organic honey industry in Hawai'i, Richard Spiegel, of Volcano Island Honey, emphasized the need for organic controls and funding for such research, although he readily admits that government agencies have limited roles in changing management practices. Individuals have to want to change their methods of keeping bees. "When it comes to *Varroa*," explains Richard, "we know that poisons [such as Apistan] are a temporary solution at best, since the mite rapidly adapts to live with that poison. They inevitably lead to more poisons, and the consequence of continually using poison to solve our problems is a poisoned and toxic environment."

So for Spiegel, beekeepers have to change their mindsets about how to

*Michael Krones of Hawaiian Honey Queen.*

care for bees, although that process can be delicate, especially for those who have known only chemical methods of managing bees and *Varroa*. Organic beekeepers on the Mainland represent an important alternative path to chemical controls, and Spiegel is exploring their methods on the Big Island before mites show up in his colonies, i.e., screened bottom boards, sticky boards, switching out old comb, and using organic small-cell foundation made from his own wax cappings. Since much of his success depends upon cleanliness and timeliness, Spiegel has started making his own organic wax foundation using techniques reminiscent of 19th century methods and/or third-world beekeeping. Spiegel is content to do these time-consuming, labor-intensive tasks because he feels it is important to the health of his bees to provide them with uncontaminated organic foundation.

Finally, Lester Ueda, a USDA, Farm Service Agency representative, addressed the frustration that beekeepers have with inadequate insurance. Presently, FSA calculates damages to hives by loss of honey production, not pest infestation. It is much easier to measure damages based on those numbers or even natural occurrences such as drought or *vog*, a smog created by volcanoes that can aggravate respiratory problems. But biological damages are harder to document because of the possibility of bad beekeeping. So, even if Hawai'ian beekeepers signed up for FSA insurance, there is no guarantee that their hives would be insured because of ongoing discussions in Congress about definitions of damages, and specifically the causes of those damages.

**Researchers, queen producers, honey producers and growers are all affected . . . and worried about what happens next.**

Although politicians and government officials are aware of the seriousness of *Varroa* mites, Hawai'i has yet to establish a long-term program to address mites. Much of the funding to address mites has been recent and only limited to two-three years. Yet *Varroa* mites fundamentally affect food availability With *Varroa* mites now established on Oahu and the Big Island, pollination services will become a major new development. According to Reimer, much of Hawai'ian agriculture depended upon feral honey bees before mites came. But this is the first year that nut and fruit orchard growers have had to worry about adequate pollination." Reimer concludes: "What I would like to see is a permanent program in the State that is beneficial to the beekeepers, the growers, and all stakeholders. The discussions at the moment are trying to decide on the role of this program and where it will be placed, among other things." Regardless of where the program ends up, it is *hopena* that Hawai'i needs to develop a long-term, extension/research program for *Varroa* as well as, perhaps, develop better apicultural practices by circumventing the past mistakes. BC

*Tammy Horn is the author of* Bees In America, *works with a queen production company in Hawai'i, and is associated with a coal mine reclamation project in Kentucky.*

# MENTORS

## Kirk Webster reminisces about the people that have influenced his thinking, and his apiary. Part I, continued next month.

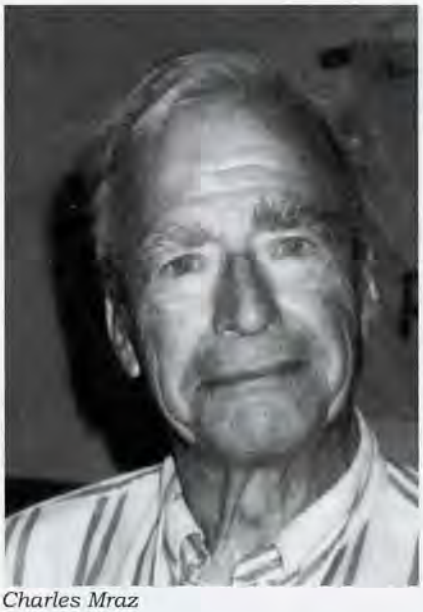
I served out the last two years of my high school sentence at a place called The Mountain School (TMS) in central Vermont. It was a tiny school with just 30 students, located on an isolated farm, surrounded by thousands of acres of abandoned land and forest, and where the students and faculty lived and mingled together like a bunch of extended families. Perfect for a dumb kid from New Jersey who didn't like suburbs, cars or stores. Bill and Martha Treichler, with help from their five children and the students, ran the farm program at the school and also taught classes in agronomy, chemistry physics, French and English. Meeting this family, and developing lifetime friendships with them, was the most transformative event of my life. I'll leave their story for last; because it's the best one, and because it overshadows all the others. They were my first encounter with mentors – also the best and most lasting.

The other momentous event that occurred during my first year at TMS was a toboggan crash that damaged my knee pretty badly While I was recovering---moping around, unable to ski or ice skate – someone tried to cheer me up by giving me a book about bees. I don't even remember which one it was – maybe *The Life of the Bee,* by Maurice Maeterlinck or even *How to Keep Bees and Sell Honey* by Walter Kelley But before I saw my first colony of honey bees, I knew this was something I had to learn more about. There were no successful beekeepers in Vershire, VT at that time so, to find a live one, I had to wait until Summer, when I was visiting my family in New Jersey Somehow I had gotten word of an elderly beekeeper who lived alone and still produced honey for sale

When I stopped my bicycle in front of Myron Surmach's one acre lot, all I could see was the tall, dense evergreen plantings surrounding and defining the property It looked like some kind of a fortress in midst of conventional suburban houses and lawns. Walking up the drive was like entering another world. Except for the small, brick house the whole property had been made into a scene from Ukrainian village life, with overgrown flower beds and towering sunflowers everywhere. Dozens of ornate birdhouses perched on tall poles, none of them quite straight up and down. There was an orchard, and a kitchen garden with gigantic vegetables growing out of dirt that looked like finished compost. There were even some beehives with walls and roof made of straw, each one built to look like a tiny thatched cottage. I found Myron re-stocking his self-service honey stand, and after a few minutes of conversation he said I could come back the next day when he would be checking his bees.

As it turned out, the straw hives were no longer functioning, except where a swarm had gone into one of them, and Myron had a row of 30 colonies in modern equipment in the back corner of the property He apologized for the unkempt appearance of the yard – his wife had died a few years before and he was having trouble keeping up. Myron was in great shape, physically and mentally – especially considering that he came to the U.S. in 1913, and could still remember everything that had happened the day before, and also what the Ukraine was like before World War I and the Russian Revolution. But the heavy deep boxes of honey were obviously getting hard for him to lift, and I soon started spending most of my free time in New Jersey at his house, helping with the bees and other projects. He showed me how to use the tools, and what to look for inside the beehive. Each of our workdays had the same pattern: I'd show up around 9:00 a.m., just as he was finishing his breakfast and we'd go directly to work in the beeyard or occasionally in the garden. We'd wind up by 12:30 and then we "must" go into the house for lunch. He would insist that I sit and rest while he prepared our lunch – usually boiled eggs and steamed vegetables from the garden. Then I would sit for awhile longer, spellbound, as he would reminisce about the rural Ukraine of 1912, when horses and oxen were the only means of transport; details about life in houses lit only with candles, and about the earthen and tile stoves that were used for cooking, heating and sleeping on at night. He described how his mother agonized over the decision to sell the family milk cow so that he could come to America. Myron had a great life in the U.S. After arriving with nothing and struggling for a few years, he finally made a big success by importing Ukrainian books and music and selling them to other more established immigrants. He was a wonderful example of generosity, cheerful hard work, and the ability to look at the bright side of every situation. My

*Henry Alley*



*Charles Mraz*

only regret is that Myron didn't live long enough to see the Ukraine as an independent country When he came to the U.S., his village was part of Austria. The first time he returned, it was part of Poland; and on his third and final visit, it belonged to the Soviet Union

About a year after I first met Myron, he advised me one day to seek my fortune in bees. I wasn't consciously following his advice, but after finishing high school, I worked for one season with Charlie Mraz in Middlebury, VT; where I returned years later and began the apiary I have now You might say working for Charlie was my Berlitz education in professional beekeeping, and it was also my first opportunity to be involved in queen rearing – watching Charlie graft with an apple twig into the cell-builders he had rigged up behind his house. Charlie's heart had been damaged by rheumatic fever as a young man, and by the time I worked for him in the early 70s, it was catching up with him. His wife insisted that someone go with him on all his trips to the mating yard so, after working in honey production during the week, I spent many weekend days catching queens and putting in cells at his mating apiary near Lake George. Charlie had not imported any bees or queens into his apiary for a long time, and made up his losses by splitting strong colonies and letting them raise a new queen. This wasn't a great scheme for honey production in the era of modern farming, but it did create a strain of bees very well adapted to its home environment, wintering well with little feed; and even at the beginning of my career, the innate "wildness" and resilience of them made a big impression on me. To be fair, Charlie was hard on himself and those around him, but it was impossible not to have an enormous amount of respect for him. He worked hard for everything he had and devoted an enormous amount of time to helping people who could benefit from bee venom therapy Charlie virtually created the apitherapy movement in N America. Over 40 years he cured and brought relief to probably thousands of people who suffered from arthritis and other diseases, and would accept no payment in return. This gesture alone is a very powerful healing force in a society like ours, focused on greed and acquisition. He deserved the monument the town erected on the green in his honor, after his death.

My next three mentors all came into my life during the three years I spent at the Cabot Farm in Wenham, MA, in the mid-80s; and where I began from scratch the apiary I have now An acquaintance had asked me for advice about a certain farm management situation I was familiar with. I advised him not to move his family there, and a year later Toby offered me a small apartment on the farm where he had found a much better job. There were three rooms, one on top of the other, built into one corner of the barn where the livestock spent the Winter In another barn there was space I could use for storage and woodworking, and I could pay my rent by doing carpentry jobs around the property during the Winter I could also cut firewood there, and there was plenty of room for a vegetable garden. The soil on this farm had been ruined by past owners, but the setting was stunning, with stone walls surrounding all the fields, the beautiful woodlots, and no way of knowing how close the suburbs had approached on three sides. When I had a housewarming party there, some of my friends from Boston stepped out of their cars just in time to see a huge team of horses come up the driveway pulling a disc harrow and a big man with a long black beard and a beret walking behind, holding the lines. After a few moments of stunned silence, one of them said. "I think we traveled 100 years backwards in that last half mile."

This was a great place for starting an apiary from scratch, without borrowing money I had a place to live and work, low expenses and the ability to pay my rent and earn the other money I needed by doing carpentry work during the Winter And, of course, bees did well there. In addition to other honey plants, there were clumps of magnificent locust and basswood trees all around the neighborhood. The location, age and grouping of these trees puzzled me for a couple of years until I found out that they were descendants or root suckers of individual trees that Henry Alley had planted one hundred years earlier Henry Alley (Wenham, MA,) and Gilbert Doolittle, (Borodino, NY,) were the pioneers of modern queen


*Artwork taken from* The Bee-Keeper's Handbook, *written by Henry Alley in 1885.*

rearing. Doolittle's grafting method eventually superceded Alley's plan of cutting out strips of comb containing young larvae, and fastening them on cell bars. But Alley's methods of setting up cell builders and mating nucs are still widely used today

In an amazing stroke of serendipity, I had started a new apiary (at that time one of a very few in the northern states focused on queen rearing) just a few hundred yards down the street from Henry Alley's house. I walked and bicycled dozens of times past the little house before I bothered to stop one day and read the small plaque in front of it, put there by the local historical society After recovering from the initial shock, I involuntarily went to the door and knocked. The elderly woman who answered turned out to be Henry's great granddaughter, and I later spent several enjoyable afternoons visiting and reminiscing with her There were just a few of Henry's beekeeping artifacts left around the house, but many memories had been passed down in the family. She could describe what the back yard had looked like when it was completely filled up with mating nucs, and also told me that Henry had only taken up beekeeping full-time after his primary source of income – a smokehouse – had burned. The mysterious locust and basswood groves were explained as well – Henry had planted these trees all over the town.

I'm very sorry now that I've forgotten the great-granddaughter's name, and within a year of our first meeting, she had moved to a nursing home, and I moved to Vermont. My last effort at historical research here was to find copies of the two books Henry had written and given to the town library These books really should have been in a display case somewhere, but I found them on the local library shelf, available to anyone. I asked the very nice looking elderly librarian what the charge was for a lost book. She looked it up in the library rules and answered. "Ten Dollars." "That's good news," I said with a smile as I pushed the two books across with my library card. She looked at the books, then looked up at me, and in her sweetest voice said, "But if you lose *these* books, we'll have you drawn and quartered

" As you can tell, I returned the books, but reading them helped make Henry Alley come alive for me, and he showed me through his activity, his memory and the trees he planted how one person's everyday work can still be present, contributing, and creating a better world for people living one hundred or more years later. BC

*Kirk Webster is a queen breeder and producer in Vermont. He is a featured speaker at the EAS Conference this Summer.*

# U.K. Gets Serious About Bees

John Phipps

*Professor Francis Ratnieks – Britain's only Professor of Apiculture.*

At the beginning of April over 200 people connected with beekeeping, from all corners of the United Kingdom and Ireland, gathered at the University of Sussex for the official opening of Professor Ratnieks' new Laboratory of Apiculture and Social Insects.

Professor Ratnieks, Britain's only Professor of Apiculture, is well known within the U.S., for he trained in honey bee biology at Cornell University and later at the University of California. After many years of learning the intricacies of the American beekeeping industry, Francis returned to England and set up a new research laboratory at Sheffield University, staying there for 10 years, before moving down to Sussex in 2008.

At the opening ceremony the Vice Chancellor, Professor Michael Farthing, in his welcoming speech, said that Sussex was a good place to study bees, mentioning that an important beekeeper from the past, Pagden*, had kept his bees in the county More importantly though, he explained, the University's prestigious Biology Department, 'the best in the world,' was only 50 metres away from the new laboratory thus allowing interaction between the two departments. However, despite the huge opportunities and facilities at hand, he said, politicians were not serious enough about promoting research into the social insects despite the fact that whilst these were worth studying in their own right, they were excellent models for understanding many aspects of human behavior so important lessons could be learned from them for society as a whole.

Professor Ratnieks, in his lecture, welcomed the opportunities and facilities he had at his disposal in Sussex, and explained that whilst an appreciable amount of money had been raised from various sources to fund the laboratory, more finance was needed for the Sussex Plan for Honeybee Health and Well being to be realized. Whilst one million pounds was needed, so far only £369,000 had been collected from private donations. However, the University had taken the brave step of allowing the department to embark on its plan hoping that more funds from private or government sources would be forthcoming. He described briefly the current plight of bees in the UK (a 30% winter loss in 2008) and their value to agriculture and said that even the government's National Audit Office in their recent paper on beekeeping acknowledged the good work being done at Sussex and recommended that the government should support the beekeeping industry through funding to higher education institutes.

The bulk of Professor Ratnieks lecture was a full disclosure of the Sussex Four Point Plan which was to cover a five year period, viz:

1 The breeding of hygienic bees which will help to clear colonies of pests and diseases (already in progress).

2. How good is the British countryside for honey bees: Decoding the communication dances made by forager bees to determine where worker honey bees are foraging.

3. Learning from other countries: Testing and developing European and North American *Varroa* control methods under British conditions and extending knowledge and good practice to beekeepers.

4. Monitoring hives for pathogens and other causes of death: What is killing British honey bee colonies?

Lord May OM AC Kt FRS of Oxford, former Chief Scientific Adviser to the Government, officially opened the laboratory and said in his address that he deplored the fact that so much research funding fell into the hands of those working on 'furries and featheries' whilst if one was interested in the fundamental questions, the social organisms are the most illuminating. "It's the small things that run the world," he said. No government money from public funds, he added, had been given to resource LASI for the much-neglected study of insects from which man could learn so much. Despite the seriousness of the subject, Lord May delighted the audience with his witty remarks and it was obvious that this eminent figure (a recipient of many awards in science and technology, past president of the Royal Society, a member of the Government's Climate Change Committee) was greatly concerned about the threats facing bees and the lack of money being made available to address the problems.

After a buffet lunch, with students acting as guides the visitors were taken for a tour of the laboratory, and researchers at various points, including Dr Karin Alton, who has a PhD in Entomology from Nottingham University described with enthusiasm their work on ants and bees. Outside the laboratory, Norman Carreck who was appointed to work with Professor Ratnieks in the autumn of 2008, showed the groups the apiary and the hive entrances set into the laboratory walls for the research hives within. Norman Carreck worked in bee research at Britain's oldest agricultural station, Rothamsted, but left in 2006 as a result of cut backs in the bee disease program, and is well known for his work with beekeeping associations within the UK, extensive research and extension work, and as senior editor of IBRA's *Journal of Apicultural Research.*

As often is the case, when surrounded by young and enthusiastic students and researchers with excellent, well-equipped premises to study in, one feels one's age and yearns for

*Norman Carreck, left, was appointed to work with Professor Ratnieks in October 2008.*

the chance to be young once more and to be able to share in their interesting and valuable work. Hopefully, though, the well-motivated researchers we met will find solutions to the problems currently facing beekeeping so that future generations will be able to carry on the craft which has been so much part of our lives.

**Details of the Sussex Plan:**

**Project 1 Breeding disease-resistant hygienic honey bees & providing breeder queens to beekeepers**

*Main aim* To breed and test a stock of hygienic honey bees and to make this available to beekeepers.

*Schedule Year One.* In October 2008 and May 2009 we will screen 50+ beehives to obtain at least 10 that are hygienic. Years One and Two. Using intracolony selection and instrumental insemination we will breed for three generations to obtain a stock of highly hygienic bees. Year Three. Continue breeding. Test hives with hygienic queens versus the beekeeper's own queens for honey production and disease levels in several locations throughout Britain in collaboration with members of the Bee Farmers Association. Year Four Continue breeding and testing. Start providing breeder queens to beekeepers.

*Current status* 80% funded by donations from Mr Michael Chowen and Rowse Honey Ltd. with additional support from Sussex University Project initiated in October 2008. Norman Carreck will lead this project alongside Professor Ratnieks. Further technical help will be hired in 2009. A survey of 48 Sussex hives in October 2008 showed that 30% are hygienic. These will provide much of the stock needed for the breeding program.

**Project 2. How good is the British countryside for honey bees? Decoding dances to determine where worker honey bees are foraging**

*Main aim* To determine the habitats and distances from the hive that honey bees collect food, the plants that they visit, and to make recommendations for land use in both rural and urban areas that benefit honey bees and beekeepers.

*Schedule Year One.* Set up equipment and methods (observation bee hives, cameras, balances, video recording, video analysis, linking to GIS mapping etc.). Years One and Two. Monitor two groups of four hives, one at Sussex University and one other in Sussex. Analyze data. Year Three. Continue monitoring. Make experimental changes to land use to see how this affects foraging (i.e., plant one acre of borage or set aside at distances c. two, four, six km from hives to determine if these are visited). Year Four Initiate collaborations and take the project to other locations in Britain.

*Current status* Seeking funding. Intended start date is May 2009.

**Project 3. Learning from other countries. Testing and developing European and North American *Varroa* control methods under British conditions & extending knowledge and good practice to beekeepers**

*Main aim* To test methods for Varroa mite control under British conditions in order to determine which combinations effectively keep mite populations below damaging levels, and to train beekeepers in these methods.

*Schedule Year One.* Literature survey and contact with overseas beekeepers and scientists to determine the most promising methods. Years One and Two. Initiate research on the most promising methods, including testing for mite toxicity and monitoring mite population levels in hives subject to different combinations of methods. Years Three and Four Continue testing and research. Begin making recommendations and training of beekeepers.

*Current status* Seeking funding. Intended start date is August 2009.

**Project 4. What is killing British honey bee colonies? Monitoring hives for pathogens & other causes of mortality**

*Main aim* To monitor levels of diseases (spore levels, virus levels, mite populations, brood infections) in hives in relation to *Varroa* control methods (Project 3).

*Schedule Year One.* Literature survey and contact with scientists to determine the most important disease-causing organisms to monitor and the best methods for doing this. *Years One and Two.* Set up monitoring of using hives in Project 3. *Years Three and Four* Continue monitoring. Initiate hive autopsy program.

*Current status* Seeking funding. Intended start date is Autumn 2009/Spring 2010, following on from Project 3. BC

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**Pagden: J W Pagden lived in Alfriston, Sussex at the end of the 19th Century and wrote the book: "£70 a year, How I make it with my bees." He also devised his own method of swarm control – the swarm was put back on the site it originated from after removing the parent colony aside. Originally intended for fixed frame hives, it is suitable for use with the moveable frame hives of today.*

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*For further details on the Sussex Plan or how you could help the full realisation of the project, Professor Ratnieks can be contacted by email:* ***F.Ratnieks@sussex.ac.uk***

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*John Phipps is a sideline beekeeper living in Greece but is originally from the U.K. He is the Editor of* The Beekeeper's Quarterly.

# TICKS!

Ne Shelton

## Beekeepers are outside people. Ticks are out there too. Sometimes the two get together Here's good information on ticks, people and common sense.

I wish I knew how many thousands of dollars ticks have cost me.

And the worst part is, they weren't even MY ticks. I used to be a rural real estate broker in southern Missouri, you see. Sometime I ought to tell you about how many people buy a parcel of land, then, when they come to camp on it for the first time, find themselves coated head to toe with ticks. This seemed especially true of those clients hailing from A Large Western State.

I think that these dear souls in particular must immediately decide that living in the forest means being constantly consumed by ticks, and that we poor rubes just don't know any better

Well, I have to admit that, when it comes to Not Knowing Any Better on most subjects, the Ozarks can field a team whose world-class naiveté is a match for any region on earth. However, if there's anything, ANYTHING Ozarkers know, it's ticks... and the avoidance of same.

The other day, I happened to pick up a gardening magazine and I stumbled across an article written by a physician regarding protecting oneself from ticks.

This, in itself was not so remarkable, but as I read on, it became apparent that I was holding in my hands a manuscript of potential importance to literary collectors.

Difficult as it may be comprehend, this learned author, who was apparently getting PAID, managed to perpetuate as truth, two out of three of the Most Common Silly Myths About Ticks that are generally held by the tick-feeding public of today

You can only imagine my elation. I'd been meaning to write something for our website (**www.homestead.org**) about ticks for months, but I was looking for an interesting angle so as to avoid making just another dry recitation of tickfact. What could possibly be more interesting than debunking myth, and who would be a better target for ridicule than a doctor?

I am, of course, ever mindful of the fact that doctors often consort with attorneys, so I don't intend to mention any names.

Out here in the woods, we don't know too much about leeches or liposuction or any of those with-it new medical procedures, but gee-golly, do we know something about TICKS! and I'm just itching to tell you about 'em.

Let's start out with those Three Common Silly Myths about Ticks:

**MYTH No. 1**. When visiting the home of the tick, leave as little skin exposed as possible, wearing long sleeved shirts and long pants tucked into your socks.

I love this one. A few weeks ago, I had the luck to run into a young woman on a river outing. Meeting this girl was like old times for me because I started out in the real estate business catering primarily to the readers of the original Mother Earth News. You can imagine then, my sense of *deja vu* to find standing before me, what appeared to be a perfectly preserved early-70's-era Hippie Chick. What was especially neat was that this was during that really hot spell we had back in July last year and she was wearing, I kid you not long underwear I didn't learn this because I asked, I assure you, but because over the course of the afternoon, she happened to mention it several times, usually in reference to the fact that she was sweating like a hog in a sauna.

She said it was to avoid ticks.

Had she ever SEEN a tick, I wondered. I mean, if she, at maybe 5'3" and 120 lbs, could get into her clothes, then why couldn't someone who was less than a 16th of an inch long? It's a good thing that ticks don't have any sense of humor, because the laughter out in the woods would be deafening when they see fully grown *homo sapiens* wandering around in July wearing long sleeves and their pants tucked into their socks.

I told her that the best thing to wear for ticks was nothing.

She looked skeptical and suspicious of my motives. I just hate how untrusting society has become.

**MYTH No. 2**: Ticks jump out of trees and land on you.

The same girl (I am NOT making her up) was wearing a sort of a sailor hat. After I professed interest in her TAS (Tick Avoidance System) she volunteered that the hat was to protect her from the shower of ticks coming out of the trees

Think about this. The tick climbs up the tree (which has got to be the approximate equivalent to a human climbing the Washington Monument) then he sits patiently waiting for a victim. Suddenly, YOU come wandering out

of the underbrush 50 feet away The tick hastily calculates your mean velocity; your height in relation to her position in the tree; the speed and direction of the prevailing wind. A hush falls over the forest. Then, at precisely the correct moment, with a powerful spring of her spindly 1/32"legs, Thunder Tick launches herself, in a perfect triple-gainer, out of the tree and into your hair

I'm disappointed that the doctor got this one right, knowing that ticks make their approach from below rather than above. Phooey

**MYTH No. 3**: Ticks must be removed very carefully

Luckily for my purposes of ridicule, the doc goes on to tell us that we should never, never, ever remove ticks with our fingers. Unfortunately, he doesn't say why, but he does recommend using fine tweezers.

He goes on to say, "Don't use alcohol, nail polish or petroleum jelly to remove ticks – it just makes them mad. A provoked tick will attach itself more firmly to it's host "

"A provoked tick" – I marvel at the mere suggestion, as ticks in my experience have seemed rather passionless. Perhaps this is where the term "ticked off" originates. The Doc recommends you go home and shower after your tick exposure. Again, he doesn't exactly say why Certainly you're not going to just WASH OFF any self-respecting tick. They do this for a living, and they're damned good at it. It makes sense though, that if you're not going to be removing your ticks (maybe you want to show them to your friends when you get home) you'll want to make certain that they're as clean as you are.

The article said the doctor was from New Jersey, but I suspect he is originally from A Large Western State.

The other day, I got into a tick discussion on a Usenet group. Some poor babe was trying to find out how to AVOID ticks, and all the local experts seemed fixated on how to advise her to properly remove them once she'd been "tick-timized"

My client seemed to favor trying to discourage the attached tick (she got dozens, of course) by burning them with a cigarette lighter This appeared to be a very painful solution and a very ineffectual one. Maybe if you pulled the tick off with your fingers and THEN burned it.

Let's get to the point here. How do you spend a great deal of time in the Great Outdoors without being driven to distraction by ticks?

**STEP ONE: KNOW YOUR TICK MODUS OPERANDI.**

Here's how ticks do business. They climb up onto a tall stem of grass or a bush and wait until something warm and juicy, such as yourself, walks by and rubs against them. When it does, they hop on.

**STEP TWO: AVOIDING TICKS**

Therefore, the number one best and most effective thing you can do to avoid ticks is to avoid tall grass. At home this is best done by mowing the lawn. In the wild, it's somewhat more difficult, but there are ways to lessen the impact of your tick-related experience.

Ticks do not immediately sink their choppers into your soft underbelly as might a Doberman Pinscher In fact, you might find that they'll even wander around in your clothes for a few hours before selecting just the right spot from your lush display of anatomy

That's just one good reason not to wear a lot of clothes.

When you must walk through tall grass or any area that promises tickfulness, try wearing shorts so you can easily see any ticks that get on you. Every so often, bend down and look to see if ticks are crawling up your legs. If they are, simply flick them off and go on your way

Grizzled old-timers think that anyone who uses insect repellent probably has lace on his shorts too, but a good repellent such as "Off" applied directly to your bare legs in conjunction with this frequent-check-and-flick routine is about as effective as any method you'll find. (Besides what's wrong with lace?)

Nothing, however, is foolproof, so when you do get them, here's the Noble Savage two-step technique for removing ticks:

1 Grasp the tick between the nails of your thumb and middle finger

2. Pull.

I think part of the reason that so many people may be squeamish about this technique is because, in the process of sucking your very delicious blood, the tick actually embeds his head inside your skin and when you pull him out, chances are the head stays behind. This can cause more aggravated itching and, I imagine, increase one's exposure to Lyme Disease.

I agree that you shouldn't try unguents or fire to try to get the tick to let go. Ticks very are slow to pick up on a hint, and you'll just look silly in the process. If you want to carry tweezers around with you, I guess that would work okay, but the most important thing is to get the tick as quickly as you can after he bites into you. The longer he's been ensconced, the more you'll itch when he's gone. I've also read that if you screw the tick out counter-clockwise, you'll remove him with his head intact. This sounds a little off-the-wall, but I've tried it, and it does seem as though they don't itch quite as much when you do. Maybe.

You may note that I've not made a lot of comment about Lyme Disease. I have to admit that for several years I suspected that the whole ailment had been invented by *Newsweek*. I'm sure I've removed 10,000 ticks from my person in this lifetime, and in my experience the itch is the major down-side. In recent years, however, my father, a confirmed tough-guy from way back, claims to have contracted the disease and if that's what he said he had, I'll not argue. I'd just comment that the odds of NOT getting it are better than one is led to suppose.

In summary, ticks are a fact of life most everywhere there are mammals living outdoors. Places that have more ticks tend to have fewer muggers. You need to put things in perspective. BC

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*Neil Shelton lives in the Ozarks of Missouri, and is chief cook, bottle washer, author and sponsor of a delightful web page on everything homesteading at* ***www.homestead.org****.*

# 'Bout a 100 – Sideline Beekeeping

## Beekeeping Is Getting So Expensive

Larry Connor

## Common-Sense Approaches To Cutting Costs

*Sideline beekeepers face many of the expenses of a much larger operation but fail to have the economy of scale professional beekeepers theoretically experience. Here are some common-sense approaches to cutting costs and keeping the level of production and service as high as ever*

As I address the ninth challenge facing sideline beekeepers, there is admittedly some interaction of concepts as we look back on them. Certainly issues affecting costs are some of the areas most likely to intersect with some of the other 'challenges'

*Working smart* – Undoubtedly we all waste time, or use it inefficiently There are times when we hang onto something – a process or idea or a queen – without any hope of return but do so for sentimental reasons or on the faint promise of income later Think smart, and work smart. If you need to use the bean-counter approach, and figure out how much it costs to do something on *per hive* basis, I suggest you take the time to do the math. That often shows how there is an economy of scale, of getting all the work done at the apiary in one visit rather than two; in working alone on certain projects when the cost of hiring extra help will eat up any profit you might make.

*Up front costs vs. average cost over a period of time* – When a deal comes along it is wonderful to pick it up, perhaps in bee equipment. Even when you absolutely know there is no risk of disease in the boxes or frames, you have to look the gift horse in the mouth. Are the boxes solid? Or will you spend many hours patching and fixing? Are the combs old or new? Old combs will require replacement and more of your time. Are the frames riddled with wax moth damage or bright, solid wood?

The really successful beekeepers who have taken the time to share financial records with me always talk about the *cost of an item over time.* From the family car to the 'big' bee truck, from the cost of new top quality equipment to the cost of equipment picked up at auction, the smart beekeeper studies the cost of an item on a per year basis. Will that new extractor work for you for five years or ten before you have to replace it because of your growth and expansion? Will it hold up for that time period? Will that hundred dollars you are saving in 2009 when you purchased an item cost you a hundred every year as long as you keep that piece of poorly made equipment in operation?

*Old Yankee beekeeper story* – A number of years ago a tough New England beekeeper passed on after approaching the century mark. Other beekeepers who knew him always felt sorry for the man, because his equipment was filled with holes and his frames came apart in the extractor They felt that he was working to keep himself going as well as the equipment for as long as possible. Later, when the beekeeper's estate was being settled, someone discovered this man had a barn filled with new beekeeping equipment – from bottom boards to lids, new boxes and all new frames, wired and foundation installed. Apparently the beekeeper was getting every penny out of the equipment before he put the new stuff into operation. The lesson? Find a balance here, and put your equipment on continuous replacement schedule to spread the costs out over as many years as is reasonable.

*Comb replacement* – There has been an enormous amount of publicity concerning comb replacement. Some of this came out after the first encounter with CCD, but many beekeepers were replacing twenty to thirty percent of their combs every year (at least the wax part), due to their knowledge that old wax holds pesticides, including the miticides used to control tracheal and *Varroa* mites. Here is an excellent example of a management decision that may not be the one the accountant wants you to follow. If they know what they are doing they would ask you this: What is the benefit of this comb replacement? Are you using so many pesticides in and around your bees that a radical replacement is necessary, or are you attempting a natural mite and disease program and trying to minimize the chemical content of your honey combs? How you answer these questions will determine your plan of comb replacement.

Ultimately it may be the bees that tell you if you have to replace your combs. If there is a reduction in productivity on older comb, the bees are talking to you. Are you listening?

*Get rid of old comb.*

*Continually replace old equipment with new equipment.*

free swarm costs the average beekeeper somewhere between $100 to $150 by the time you add in all the time, fuel and effort that goes into the capture of swarms and their management. A certain number of swarm calls will be duds – the swarm already left or it is a nest of wasps. Many beekeepers remove swarms as part of their service to the community I encourage that. We need everyone to see the beekeeper as the good guy or gal.

**Where can I cut costs?**

*Labor* – If you pay someone to help you work bees you need to be very careful about the cost benefit you get from this setup. I am always amazed how many people keep employees sitting around, wasting time while the boss gets off the phone or away from the spouse and household chores.

I know it is nice to have help with beekeeping – from putting equipment together to pulling honey But to hire someone, from a family member to someone you just want to help out, may ultimately mean that you are working for that person to cover their paycheck (and not yours). You have to become organized (and probably won't). You have to have a clear vision of what you want to do and the job is not done until the list is finished. Part time help can be very challenging, since the employee either has another job or a family to manage as well.

A friend of mine who isn't a beekeeper has faced the current economy and decided to not rehire an employee for seasonal work. My friend said that he is amazed how much more relaxed he is not having to find jobs for the employee to do (sometimes mowing the lawn), all the time paying him a pretty good salary for Michigan economics. So far this season, not having the employee is working. The friend is only doing smaller jobs and is doing ALL the work himself. He is in charge (well, as much as the guy is EVER in charge), and not spending hundreds of dollars every week that he has done for years. That amount of money, added up over half a year, will probably make the difference in making money this season, rather than loosing it. Yes, it now takes him longer to finish a job. But when it is done, he did it. He does not have to return to do any 'service recovery' because the employee botched the job.

This guy has a lot more patience with people than many of us. He was doing the employee a great favor, but was spending money that he did not need to spend.

There are always a few people who will work for nothing or next to it. They are called Parents. I am always pleased to see Dad working in the honey house or wood shop, staying busy, rather than asleep on the lounger How many of us need to find some one who will help us, and who knows the job, and will be delighted to help out in the effort to feel useful and needed.

*Packages vs. Nuclei vs. Swarms* – As I mentioned above, some of those 'free' swarms can be pretty expensive. If you have to take time away from work, or you do not get the work done that you set out to do today – that swarm is not worth it. Find and train hobby beekeepers to catch swarms. If you are going to be a semi-professional beekeeper act like one!

As far as the Nucleus vs. Package battle – you will need to do the math yourself. How do packages fit into your operation? How could nucleus hives change your system of management? Would fifty nuclei hives make as much money for you as 100 package colonies? Only you can answer these questions for your operation. Keep good records when you make side-by-side comparisons.

*Buying queens vs. raising them* – If you are a regular reader you prob-

ably know that I MIGHT argue that you should raise your own queens to cut the cost of buying queens every season. The reality is that there are indeed many situations when semi professional beekeepers would be better off raising the queens they need, modifying their seasonal production schedule, and investing the money they spend on queens for the cost of training to learning how to raise queens.

Not all beekeepers should do this. Many of us are too busy to raise queens, and if we try to do it we may not have the skills necessary to produce a top quality queen, and our entire operation may suffer due to inferior queens. Keeping the best possible queens in your colonies is a sound business practice: if you cannot produce those queens then you should get them from someone who can. Many areas of he country I have visited are well advised to promote the production of localized queens by a few local beekeepers who are well suited to fill this economic niche in the queen production market.

Where I am, not quite to the 43rd parallel, the season for producing queens should start no sooner than fruit bloom (second week of May) and could come to a screeching halt in August or early September if the bees are on a dearth. It is a lot harder to produce queens when there is robbing going on from hive to hive, and when the colonies are locking the drones out at night. That said, there is a strong potential for production and sale of queen cells (at two day and 10 day ages), virgin queens, and mated queens. There is a five to ten fold difference in price from a ripe queen cell to a mated queen, and queen cells, quite frankly, are a simple and cost effective method of making up colony losses during the Summer when you reconstitute hives for the fall and winter Cultivate a close relationship the local beekeeper who is able to produce quality cells during June and July in the northern states, and treat her well.

After equipment, queen bees are often the largest cost area in a mid-sized operation (I am assuming you do not move bees to almonds and have a huge trucking cost).

*Win by not playing* – When it comes to almond pollination this season numerous beekeepers were exposed to the fickleness of a down market, and are in the process of re-thinking their decision to put their colonies into a pool with other middle sized operations to make up a load. When everything is done by the book it can pay, but 2009 will be remembered by many beekeepers as the year they lost money on almonds.

*Labor costs.*

*Shop for insurance* – After a year of shopping, I found a much better insurance arrangement for the family farm when I linked it to my house in the city I did not intend to do this, and I have some misgivings, but the savings were huge – nearly 50 percent. By linking there are no gaps in coverage. Bees and other farm products are covered. Yep, it is a small-scale beekeeping operation, but I wanted protection for the rest of the family and to make sure there was plenty of liability coverage. There may be 20 or 30 hours of time invested in this insurance hunt, but we will see the payback every year when the renewal comes due.

Finally, I remind everyone to KISS – Keep It Sweet & Simple. When in doubt, do the simple and direct thing. I see people spending a lot of time making fancy honey displays only never to use them. Chances are there is one in another beekeeper's warehouse. Make them a fair offer.. But only if you have a clear plan on where and when you will use it. BC

*In July Dr. Connor is offering a queen rearing class in Michigan, over the middle weekend in July. If you want to know more, contact* **LJConnor@aol.com** *He plans to be at HAS, EAS and WAS this year – a first for all three in one year. Any bets he makes it?*

EAS Holiday Valley

# My Lawn – My Bees – Revisited

James E Tew

## I will intentionally annoy my neighbors and friends . . .

### What can I say that I have not already said?

What can I say? I have harped and harped. I have bemoaned the loss of bee pasturage. Yet, I have had precious few recommendations and even fewer comments from you on the subject of bee-unfriendly, grass lawns. In *Bee Culture* October, 2008, I published an article entitled, *"My Lawn – My Bees. Must I Choose One or the Other[1]?"* For the first time in all my years of writing, for my contribution to *Bee Culture* this month, my initial thought was to redirect you to that piece and call it my article for this month, but I don't think Editor Kim would have bought that – literally So, I am going to harp one more time on my lawn maintenance program and my bees. I would suggest that you re-read that article before charging into my offering this month.

### But I need to confess that I am tiring

In the article I referenced, I described my unkempt back lawn and compared it to my highly treated front lawn. Right now, my back lawn – by current standards – looks as though my property is abandoned. I like it that way *What did he just say?* I defensively said, **"I like it that way!"** And, I would have liked it that way even if I didn't have bees. I like to walk in the deep foliage and to remember my early years on an Alabama farm before herbicides were common. I like to watch the bees that forage on the "weeds." I like the butterflies that flit about. I love the sweet smell. I said all this last October Nothing has changed since last October – but it should have. I simply have no desire to live on a golf course-look-alike-lawn. But clearly, clearly, clearly – I am in the minority And it's a lonely minority I need to confess that I am tiring of the one-sided fight. It seems so hopeless. Bee pasturage vs. the national turf industry will have a foregone ending. We will lose.

### A.I. Root supported the establishment of lawns

In 1886, A.I. Root, himself, was selling a push-type reel mower for $5.50. Very old *Gleanings in Bee Culture* (late 1800s – early 1900s) give specific instructions on how to install grass lawns and how to kill dandelions with salt. Comments were made that the grass, Timothy, would take over at first, but later, Blue Grass sod would squeeze out the Timothy A.I. Root described the beauty of a grass lawn and how the women in his family preferred to stand on grass when hanging laundry rather than standing on bare ground. I seriously doubt that A. I. Root foresaw the extent to which lawn philosophy would change in future years – but I have no authority to speculate as to what A.I. Root thought about such issues.

This lawn passion runs very deeply in our psyche and that passion was experienced by some very influential beekeepers within our industry Yet here I am – harping. My unanswered question continues to be, "Why are various species of grass my only choice for lawn sod?" Where are the clover people? Clearly, those of us bucking the lawn system are on our own. I have listed a few of my observations that I have acquired as I let my back lawn go natural.

### Recommendations for maintaining an unmowed lawn

You see, to the best of my knowledge, there are no recommendations for maintaining such a yard. I am on my own and it is lonely In the manicured residential area in which I live, I have developed a few tentative coping mechanisms. My list is short, but here it is.

### Recommendations for maintaining an unmowed backyard.

1. Don't apply supplemental fertilizer Let clover supply needed nitrogen. If you use chemical fertilizers, you truly do get a run-away lawn. (I assume that grazing goat or sheep on the lawn is impractical.)
2. Unmowed does not mean never mowed. Initially, I mowed after clover finished blooming, but as the years pass I am increasingly putting off the single mowing of the season until early November I suppose that if I never mowed my lawn, it would eventually turn into a forest.
3. If you must mow when bees are actively foraging on weeds, mow very late in the afternoon or at night if you have lights on your mower Operating your mower at dawn will rile your neighbors.
4. It takes a serious mower to make that one seasonal cut. The foliage will be tall and rank. The seasonal mowing will require several cuttings possibly even raking (Ugh). Ideally, leave the clippings on the lawn but composting is a common option[2]

[1]Tew, James E. 2008. My Lawn – My Bees. http://www.beeculture.com/storycms/index.cfm?cat=Story&recordID=610

[2]Don't Bag It – Recycle Your Grass Clippings http://cecalaveras.ucdavis.edu/grass.htm

5. I cut an obviously wide swath (or border) around most of the unmowed area. This gives my neighbors the impression that I intend for my lawn to look that way and that I don't simply have a mechanical problem with my mower
6. Chemically treat that mowed border for weed control. I know many of you won't do this and I don't blame you one bit, but I apply herbicides to that border to kill "weeds." Since both of my close neighbors employ lawn care companies, they tend to be just a tad more than inquisitive about my reasons for not controlling my weeds. It is as though all the neighborhood weeds are coming from my lawn. They are not. The clean border is my defensive barrier
7 Expect "bully" plants to try to take over *Bully plants* is my term for plants that will try to overrun the plot. Dandelions, wild mustard, and various species of ground ivy are examples. I have no control program for them.
8. Plant native wild flowers within the grass/clover canopy Most won't take, but a few will.

*If I had any doubts that my uncut lawn was going unnoticed, this sign I found in my yard removed them all.*

### The differences are noticeable

The differences between my treated front lawn and my untreated back lawn are noticeable. From a distance, both look green, but upon closer examination the differences in plant species are clearly visible. I would love to tell you that I can tell a significant difference year round, but I really can't. The clover might be more drought-tolerant, but in July and August, the lawn seems to pretty much go dormant.

### The Downside to an unmowed lawn

#### It's unsightly

Yes, I feel that there is a downside to an umowed lawn. By far, the most obvious characteristic of an unmowed lawn is the sloppy appearance. I rush to write that the perceived appearance is relative and one that society has acquired as chemical weed control has become common, but nonetheless, most people feel that an unmowed lawn is unsightly

#### It stays wetter longer

In some ways, this may be considered an attribute, but a walk back to my storage barn after a rain will wet me up to my knees. In fact, simple dew-covered tall grass will wet me more than I like.

#### It may attract wild life I didn't want attracted

I am not sure how to make groundhogs welcome at my place. It seems like if I get one, I get them all. They seem to like my undisturbed backyard. Do I get more Japanese beetles? I don't know but I do see them on various plants in my unmowed/untreated lawn. I see none on the treated grass front lawn. Does my untreated area attract them or would they be here anyway? I also have more than my share of deer

#### My grandkids don't seem wild about the scruffy growth.

Maybe they just are not accustomed to it. Maybe I am giving them memories they will have for a lifetime, but for right now, my weeds are nearly as tall as my grandkids. They go back there occasionally, but more often, they stay on the mowed areas. They don't seem to care for the wild preserve.

### As I have said in every one of these articles I have written, I am not opposed to grass lawns.

I am not opposed to grass lawns. What I am strongly opposed to is not having a choice other than which kind of grass I want to form my lawn. I grew up cutting grass with a push mower and operating a tractor with a "Bush Hog" cutter attached. Freshly cut, manicured grass is pretty Cut grass has a smell that makes me recall parts of hundreds of memories. Walking and living on grass is infinitely better than living on rough, hard ground. I didn't mind the lawn care company putting the sign in my yard that I pictured elsewhere in this article. They're just trying to make a living. I don't think less of my neighbors and my neighborhood for wanting nicely maintained lawns. In a limited fashion, I even use selected herbicides and apply them as per label instructions. My peeve continues to be, "If you want anything other than grass, you are on your own."


*My back lawn – in all its glory.*

*My treated, "Green Desert" front lawn. Nicely manicured but even a goat couldn't survive here.*

### Turf Statistics and Estimations[3]

- The U.S. has 60 million lawns, 16,000 golf courses and 700,000 athletic fields. Lawns are the most common type of landscaping.
- 80% of U.S. households have a private lawn.
- If every lawn in the United States were sewn together, it would create a lawn blanket big enough to cover Kentucky or most of New England.
- Lawn covers three times more acreage than corn, America's largest agricultural crop, making turf grass America's largest irrigated crop.
- Before the introduction of herbicides some 60 years ago, lawns were a mix of grasses, clover and dandelions.
- Lawn care is a $40 billion industry
- Turf grass soaks up 10,000 gallons of water per Summer on the average 1,000 square-foot lawn.
- A gas-powered leaf blower emits as many hydrocarbons in 30 minutes as a car driven cross country at 30 mph – twice.
- While gassing up our mowers and blowers, Americans annually spill 17 million gallons of fuel – six million gallons more than the Exxon Valdez spilled in Alaska in 1989.
- Plant diversity requires fewer pesticides, less water, no mowing and supports more wildlife. Native plants also attract a variety of birds, butterflies and other wildlife by providing multiple habitats and food sources.

### In general, what's going on?

Where are all the fireflies going? What's up with all the amphibians – frogs, salamanders, and newts? I rarely (actually never) see poisonous snakes in Alabama on our family farm. As a kid, they were everywhere. It was a way of life to see some kind of snake nearly every day Song birds? Their population is in decline, too. So I never thought it was really surprising that bee populations are in general decline and have been declining since 1947

In my mind, a nicely manicured, weed-killed lawn is becoming the poster child of a sterile, treated environment that seriously limits the carrying capacity of the local ecosystem. My perception is unfair Certainly, extensive chemical use in international agriculture is having a much more serious effect than that of the lawn care industry But outside my door as I write, I can clearly see the expression of the sterile lawn all around me that the lawn becomes an easy mark for some of our environmental problems and bee shortages.

### Yet, "Green" is in!

But, somehow, I feel that beekeeping is very nearly missing the *"Green"* boat that is departing right now Nearly every week I learn of yet another city or area that is now allowing – indeed even encouraging – the implementation of gardening projects. Increasingly chickens and bees are allowed. If you have an acre plot, maybe you can even get a goat.

The National Geographic article, *"The End of Plenty"*[4] describes a looming challenge – feeding the world in the near future. As would be expected and as would be proper, the emphasis in this NG article was on corn and rice production. Most arable land is in production now So the pressure is on to cut down more rain forest and farm marginal land. Ultimately, water for crop production will increasingly become a problem. In most of the world, a green lawn is the stuff of heaven.

Yet, I feel that beekeepers are somehow missing their importance – again. Bees don't pollinate corn and rice, but bees are wildly important for maintaining a diversified diet through vegetable and fruit production. But the average U.S. homeowner will have a strong opinion that somehow – someway – a grass lawn is more important than a bee-friendly lawn. It's just weird. It's just weird. I'm betting that the actual value of the turf industry is 30-40 times the actual value of the bee industry It's just weird. How did things get so reversed?

### Blog Comments

I have posted some additional comments on my web page concerning lawns and bees. If you've nothing better to do, have a look at http://beelab.osu.edu/.

### Until next year

So here it is. I will unintentionally annoy my neighbors and friends until I mow my sloppy lawn in the Fall. I will continue to try to find a way to convince myself that my scraggly back lawn has a desirable look. I will continue to explore ways to make my style of lawn appealing to a diversified population of insects and wildlife. I will continue to try to accept the fact that I am eccentric and becoming more so as I age. Until next year BC

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[3] Statistics taken from: http://www.greensceneusa.com/City-Scene/articles/Lawn-Nation-a-86.html?page_name=City%2BScene; http://www.backyard-nature.com/cgi-bin/gt/tpl.h,content=381

[4] Bourne, Joel K. The End of Plenty. 2009. National Geographic. Vol 215 (6) June. Pp 26-59

# The Maritimes Look To Expand Beekeeping

## Beekeeping Course Attracts Blueberry Growers

Kathy Birt

Tackling the issue of bees for pollination was addressed this Spring in Prince Edward Island (Canada).

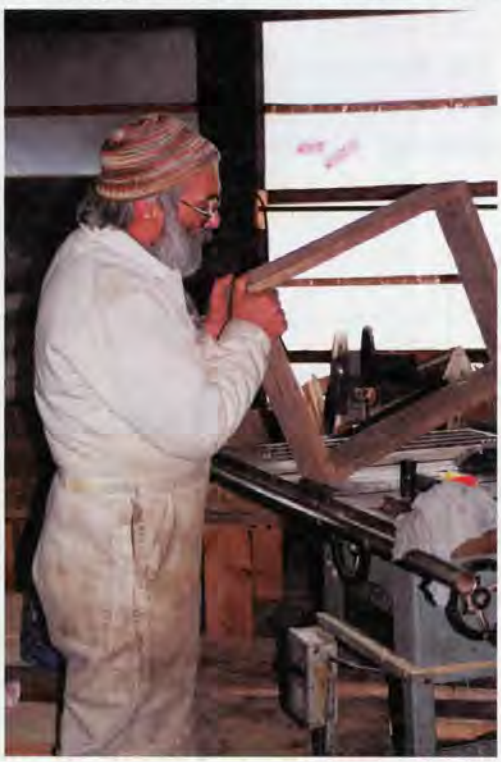
A four-day beekeeping course was held in April, primarily at the Charlottetown Research station as well as a full day at the biggest bee plantation on the Island. Last year this course was the first if its kind in recent years and the follow-up course this Spring saw a keen interest from all participants.

Stan Sandler, the guru of PEI beekeepers, who maintains upwards of 3000 hives at his bee plantation in the rural community of Iris, was selected to teach this course by the PEI Department of Agriculture. With 30 years of experience to back him up, and being the largest commercial beekeeper renting his hives for pollination, he seemed the obvious choice.

Chris Jorden, berry crop specialist with the Department of Agriculture, who is also responsible for bees, says he and Sandler had consulted on the course earlier and the agriculture minister at the time, Neil LeClair agreed to it and approved the funding.

Jorden says most participants had already approached him about a course over the Winter months. "They wanted a course of some kind on beekeeping, so getting people to take it (the course) was not a problem. I had to turn people away," says Jorden.

He notes that most of the participants, which was 20 plus for both courses, are blueberry growers or work for blueberry growers, and adds, "And there is a few small time beekeepers who want to expand and some have done that already "



*Making boxes.*

In fact, one participant in the Western end of the Island is already at the stage with his expansion whereas he rented hives for pollination this Spring.

Currently for blueberry pollination purposes, Sandler makes up the bulk of hives available. Daniel Fizza of Canoe Cove maintains about 500 hives, and also rents to blueberry growers. But with 9000 acres of blueberries and another 3000 in development in PEI, as well as cranberry crops and apple orchards all in need of pollination, those 3,500-4000 hives is not near enough. "We need about 6000 to fulfill the need for blueberry pollination alone," says Jorden and adds, "We would be getting close to self-sufficiency (with 6000 hives) and be able to eliminate (borrowing from) Nova Scotia."

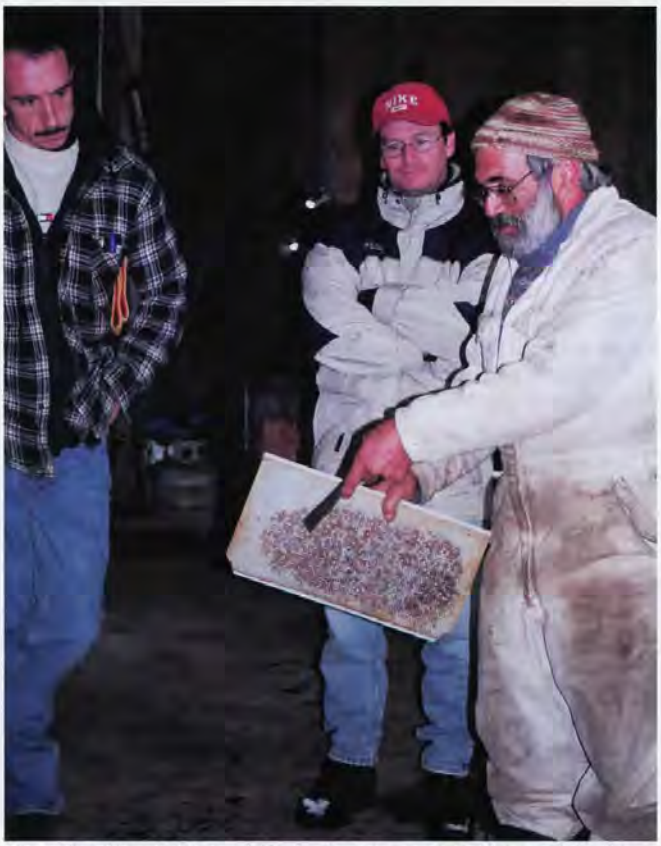
For now the province of Nova Scotia supplies the balance required with what Jorden says is a very fragile border agreement. That agreement is determined on whether or not the bees from both provinces have the same diseases. Last year's pollination needs were met, however, there was some talk by blueberry growers of bringing in bees from Ontario. Those talks never materialized into any kind of deal, but may have been the catalyst to bringing about the beekeeping course.

LeClair says he's happy the course got off the ground successfully with good participation. "With Stan's hives, we are half way to getting what we need, but the province's agreement with Nova Scotia is something we have to look at carefully," he says. He says no one knows from one year to the next what diseases can be picked up (by the bees). "That has been an issue in the past and we have take a pro-active look at this pollination situation and get to the point where we can be self-sufficient," says LeClair

**ON SITE TRAINING**

Sandler, who knows his way around any chore that has anything to do with raising bees, making honey and

*Stan shows the insides of his extractor.*



*Stan Sandler, right, and Chris Jorden, next to him explain the differences between wood and plastic frames.*

transporting for pollination, spent one day of the workshop on site at his plantation in Iris. Here he instructed the participants in the art of building boxes for hives, where to get the frames, and which to use plastic, or wood, how to clean frames, and feed the bees and participants even had a taste of pure pollen. The consensus seemed to be from Sandler's point of view that those just getting into the business with a few hives, buying ready-made frames was the best route to go. "You can get them for just $2 each," says Sandler He recommended a couple of beekeeping co-ops on the prairies as opposed to paying shipping charges across the U.S. border

As far as wood for boxes, he says the preferred wood is pine, but he has used larch, spruce, fir and others.

Traditionally, hives are built from wood, but with all his years in the business, Sandler is looking at ways and means of making life simpler for himself and the bees. A very different approach to streamlining hives and simplifying the feeding of bees, Sandler showed participants how a Styrofoam cooler could be very quickly utilized for starting nucleus hives with a small cluster of bees.

The new, the old and the traditional was explained as Sandler fielded questions and demonstrated the many ways he has built boxes, split hives and carried out general maintenance, as well as extracted and produced honey for the commercial market.

The other three days of the course were "classroom work" conducted with slide presentations, discussions and dialogue held in Montague and Charlottetown.

Jorden concludes that the overall feedback was very positive. "Some participants were making arrangements to transport nucleus colonies over from Nova Scotia to get started and others with small numbers of hives were looking to increase (their numbers)." BC

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# To Make A Cherry Pie

## *You should not have to create the universe just to create a jar of honey*

Gwen Rosenberg

"In order to make an apple pie from scratch, first you must create the universe." Carl Sagan once said that. My guess is that he said it out of irritation that his grandmother's apple pies were always vastly superior to his, despite his over-sized intellect. If she was anything like my grandmother, she chuckled at his pale, mealy, pie crust, and swore that there was no secret to pie baking. Maybe she even demonstrated her technique while he furiously scribbled notes and measured her handfuls of flour Carl may have been feeling a little touchy and sarcastic about the whole thing, but I can relate because I too, have longed to bake a cherry pie like my grandmother's. Time and time again, my best efforts fail to compare, even when I follow her recipe.

I think Carl may have hit on something with his create-a-universe answer to pie baking. It's my thought, however, that Carl would impress Grandma much sooner if he reverse engineered the universe, rather than messing with primordial ooze, and creating light, and whatnot. My plan was to create a pie from scratch by reverse engineering my grandmother's sour cherry pie. I had the recipe, the tools and the oven. What I did not have was the sour cherry tree. She had her own sour cherry tree growing in the backyard. I was going to need to grow a tree.

As a beekeeper I feel a certain entitlement to all things agrarian. Since I already have bees, how hard could it possibly be for me to grow a tree. Really, it can't be any harder than hiving a swarm. I'm an intelligent person, maybe no Carl Sagan, but I was certain to reach success in the kitchen before him. By reverse engineering the universe, starting with one cherry tree, I thought I would reach pie perfection in time for Grandma's birthday, next mother's day at the very latest. Here's what happened.

I ordered a tree. I paid $50 for a sour cherry tree that was going to blossom this Spring and fruit next Summer This tree was a Cadillac. I paid extra for the professional pruning (Incidentally, a professionally pruned tree looks like a stick with a tangle of roots on one end), I paid for the over-sized shipping, I bought the special tree growing fungus the saleslady told me about. I bought the tree wrap for the trunk, and

read the *Midwest Fruit and Vegetable Handbook*. I selected a spot in the yard that got full sun, and I dug the biggest hole I've ever dug in my life. I ordered a truckload of composted horse manure and mixed it up with sand and soil. I'd never grown a tree before, but already I was a smug pro. Carl Sagan was going to have to eat my dust – my universe was well on it's way to revealing the secret to baked desserts.

Then it rained. My hole, dug from the dense, compacted clay found in Ohio, filled with water The hole remained filled with water The compost and the sand together formed a semi-liquid quick sand, and days later the surface still rippled if you disturbed it. The tree tilted to the side in the muck, and remained dormant. The flimsy two-page pamphlet that came with the shipping material said something about cherry trees hating to have "wet feet." Trees have feet? The book said I should water the tree everyday for at least a year How do you water a tree without getting it's feet wet? Another source said cherry trees should be planted on a hillside for the best drainage. Yet another source pointed out that not only did I select a poor location to plant my tree, apparently the variety I chose shouldn't be planted in Ohio at all. Gardeners in Zone five are limited to fruit bearing trees found on the Arctic tundra.

I moved the tree to a sunny slope; another huge hole, more compost, sand and fungus. Still dormant. One morning I observed spots on my tree, convinced that my future pies were in jeopardy, I carefully collected a sample and immediately drove to the University extension field office. Two days later the results were in: "Mrs. Rosenberg, I'm sorry to tell you this but, your tree has specks of dirt on it."

"Should I spray for that?"

You could consider me an organic beekeeper but, when it came to this cherry tree I was willing to throw all my eco good intention, and my dignity, out the window if it meant I could get cherries to grow on that lifeless stick. I had already surveyed every master gardener I could get my hands on to try to amass some consensus on the issue of spraying, but each person had a another response that contradicted the one before it. The answers ranged from spray once a week forever, to never ever spray ever One helpful canning tip I received was that worms float to the top of the jar after you can the

cherries. This was offered as a piece of good news.

The county extension agent suggested I take a fruit tree class. The recent onslaught of urban beekeeping has made me into something of a tutor to a number of urbanites looking for a fun and easy hobby Oh, I'm a real champion of the beginner beekeepers. It's soooo simple, I tell them, with all the confidence of someone whose been keeping bees for nearly a decade. There's no trick to it at all. Now that the shoe is on the other foot, I realize that perhaps I could have been slightly more generous with my explanation of integrated pest management techniques. Or perhaps I could have addressed IPM *after* they ordered bees.

There's no trick to beekeeping for me, but who knew that fruit trees would be such an impossibly difficult undertaking. I wasn't expecting a kink in my universe plan until I got to re-creating the molecular composition of tapioca. I'm a beekeeper for cryin' out loud, I should just know this stuff! I wonder how many gardeners when confronted with evaluating brood patterns felt the same as I did at that moment. While I was prattling away saying "A laying worker can only lay unfertilized eggs that hatch into haploid drones, duh." How many of them were cursing me under their breath for making it all sound so utterly impossible, like creating photosynthesis – or a universe. Now here I am, looking for someone to point out tree feet to me. What will the tree teacher say when I tell him or her that I picked off a bunch of the buds looking for signs of life underneath? Or that I planted garlic all around the tree in a misguided effort to ward off sap sucking flies?

At least fruit trees come in one piece. Beekeeping requires buying equipment, bees and a queen. Alone in the beeyard, new beekeepers are supposed to figure out how to get thousands of flying bees and a queen, still in her cage, into a newly assembled wooden box. That's like the nursery sending me cherry pits and root stock so that I can graft my own tree. Plant a tree on a sunny slope, but where's the best place for a beehive? The entrance should face south, unless it shouldn't. Don't forget the hive stand. Where do hives like to stand anyway? On their feet? No wonder there are very few questions at a bee class.

Beehives may not have feet, but they come with an absolutely ridiculous vocabulary to memorize. What's so super about that box anyway? A super box, deep, hive body and brood chamber are all the same thing! Don't forget hive and brood nest, too. Beekeeping's early warning detection of a beginner is the mispronunciation of the word nuc. Why do we have to call it a nucleus, anyway? It's not to be confused with a package, an increase, a split or a swarm, by the way

The University extension office sells a tremendous hardcover book with beautifully illustrated examples of all the things that want to eat the fruit tree in my backyard that has yet to generate a single bud. In beekeeping classes even I've sat wide eyed at the astonishing array of illnesses and honey bee afflictions. I imagine if I were a new beekeeper, I'd want to know if the foul brood can be detected by all the back talk and swearing coming from the hive. Or, if the European foul brood swear in French. And how do you break the curse of the chalk brood mummy? The description of a nosema outbreak would have made me completely abandon my beekeeping aspirations.

I've assisted beekeeping classes and taught a few people to keep bees myself, and I've assured the beginners that there is no secret, nothing tricky, and nothing that a child couldn't master I've answered cartoon inspired questions about swarming and wow-ed nonbeekeepers with tales of pheromones and waggle dances. I've explained the difference between royal jelly and the candy plug in a queen cage. Keeping bees is easy, if you already know how. The same goes for fruit trees. When do you add a super? The question might as well be, when should I spray a tree for pests? It's easy, weekly It depends. Never There's only a couple of exceptions that you shouldn't ever forget, but I can't remember them.

Keeping bees and growing fruit trees and even baking pies are skills that require some education and a fair amount of experience to do correctly They may not be especially difficult, but any new skill can be made easier with good instruction. Upon considering myself as a student learning how to grow a cherry tree, I offer this advice to instructors of any sort: Do not overwhelm beginners. Do not judge their questions. Do not take your role as an instructor lightly After all, even Carl Sagan threw his arms up in exasperation because he couldn't figure out how to make a decent apple pie. Next time I'm asked to help a beginner beekeeper I'm going to be certain that they do not feel that they have to create a universe just to make a jar of honey BC

*Gwen Rosenberg raises bees, but not cherries, in Kent, Ohio.*

# Black-Eyed Susans

## Also know as rudbeckias and coneflower, there are about 30 species of these native wildflowers.

Conn e Krochmal

The black-eyed susans are a welcome sight to beekeepers. The abundant flowers open from mid-Summer onward until they're hit back by frost. Providing bees with nectar and pollen, these are reliable plants for the bee garden.

Also known as rudbeckias and coneflower, there are about 30 species of these native wildflowers. In addition, various cultivated forms are also available. Among these are perennials, annuals, and biennials. Some of the perennials can be treated as annuals since they often bloom the first year when grown from seed. Black-eyed susans are members of the daisy family

Depending on the species, these plants can vary tremendously in height from a foot up to nine feet or so. The plants typically have branched stems.

The heavily veined foliage is often lance-like. Mostly alternate, the leaves can be compound. In some cases, they're lobed and toothed.

Black-eyed susans have solitary daisy-like blooms. They open terminally at the ends of the shoots as well as from the leaf axils. Typically, the flowers have yellow petals, which are called ray flowers. The disk flowers form the center or cone, which can vary in color from one species to another These can be brown, black, or greenish.

Some cultivated forms of black-eyed susans have double flowers, which aren't as good for bees. For that reason, check the catalog description or plant label before choosing plants. To help beekeepers avoid double flowering ones, varieties known to have double flowers are mentioned below under each species.

**Growing Black-Eyed Susans**

Black-eyed susans are easy to please. Most species thrive in moist, well drained spots. A reasonably fertile soil is best. Partial shade and full sun are suitable. Once the blooms have faded, deadheading can encourage a new flush of flowers.

Though black-eyed susans are typically care free plants, they can sometimes suffer from various kinds of problems. Powdery mildew, which can occur in late Summer or early Fall, is typically triggered by high humidity and elevated temperatures. Occasionally, other diseases, such as rust, can occur Slugs and snails also attack the plants. Aphids target the new growth.

Black-eyed susans are easy to grow from seed. Seeds are usually planted during early Spring. Generally, most will germinate best at 60 to 65°F The seeds don't need covering. Some of these species will easily self-sow, especially the gloriosa daisy

In addition, these plants can be propagated from basal cuttings. Division is also a way to get new plants. The best time to divide is in March and April.

*Rudbeckia toto*

Though there are some exceptions, most black-eyed susans are hardy from zones three through 10.

In the bee garden most species can be planted several feet apart. The spacing should be increased for the larger species and varieties.

The following kinds of black-eyed susans are recommended for bee gardens.

**Brown-eyed susan (*Rudbeckia triloba*)**

Also known as three lobed coneflower, this is typically an annual or biennial. Often forming clumps, brown-eyed susan sometimes behaves as a short lived perennial. As a perennial, it can survive for several years.

This reaches five feet in height with a spread of three feet. The branched stems can be hairy The leaves, which have three to seven lobes, can be toothed. The foliage is five inches long.

Brown-eyed susan is very floriferous. Up to 2½ inches wide, the blossoms have six to 12 dark yellow to almost orange petals. The base of the petals can be darker colored – almost brown. The cone is blackish-purple to black. The flowers open from mid-July through the Fall. Plants grown from seed will bloom the first year

Different forms of this plant occur in various areas of the country. These natives are found over much of the East. Their range extends westward to Oklahoma and Arkansas. They grow in a range of habitats from rocky slopes and mountains to open woods, fields, and thickets in both dry and moist spots. This is recommended for zones three through 10.

There is a dwarf variety (*var nana*) that blooms much earlier than the species. It begins flowering as early as June in some locations.

*Rudbeckia Hirta (Prairie Sun).*

**Cut leaf coneflower (*Rudbeckia laciniata*)**

A reliable, long lived plant, this is also known as coneflower It is a branched perennial with wiry stems that are smooth and hairless. Forming clumps, this species can vary greatly in height. In some cases it is only 1½ feet tall. However, it can reach nine or 10 feet under good growing conditions. Give this plant plenty of room for it can be three to five feet across.

The foliage is very hairy. The lower leaves, often lobed, are up to four inches long.

The bristly looking, light yellow blooms have greenish or greenish-yellow centers. The petals tend to droop. The blossoms are 3½ to six inches in diameter This species starts flowering in mid-June in warmer areas of the country

Cutleaf coneflower is a coarse perennial that typically occurs in moist woods and rich low spots. It is found over much of the eastern half of the country Its range stretches to Montana and Arizona. Because this species prefers moist soils, it will need watered during droughts. It is recommended for zones three through nine.

There are several cultivated forms. However, a number of these have double flowers. These include Golden Glow, Gold Drop, Golden Fountain, and *var hortensia.*

**Gloriosa daisy (*Rudbeckia hirta*)**

Also called black eyed-susan, this is one of the most popular of all the species. It will take drier conditions than most other kinds.

Generally, it is best to treat gloriosa daisies as annuals. In a few cases, some will behave as short-lived perennials. Though there are some exceptions, the taller varieties are the most likely to make it through Winter

Unfortunately, gloriosa daisies often suffer from powdery mildew The taller varieties are less susceptible. To minimize disease outbreaks, allow adequate space between the plants.

This erect, branching species has very thick stems. It can be one to three feet tall and up to three feet wide. Both the stems and foliage are hairy The basal leaves are up to four inches long, while the stem leaves tend to be smaller The foliage is usually coarsely toothed.

The blooms, which are three to five inches wide, open on tall stems. They appear from June until frost. The petals are pale yellow to orange-yellow. The prominent cones are dark brown or purplish-brown.

Gloriosa daisy is found over much of the East. Its range extends westward to Illinois. It occurs in various types of habitats from open woods, fields, and thickets to barrens. This is hardy in zones three through seven.

There are a wide number of varieties available with the following being particularly outstanding. Bambi grows to a foot tall. The flowers range in color from pale yellow to deep red and brownish-red.

Gloriosa Daisy Mixed has blooms in a range of colors, including bicolors. The flowers are up to six inches in diameter

Irish Eyes is a much admired gloriosa daisy This plant is two to 3½ feet tall and two feet wide. With vivid yellow petals, the blooms are 3½ inches across. This variety is named for the lovely green cones.

Rustic Dwarf reaches two feet in height. The blossoms come in a mix of colors from yellows to bronzed oranges and reddish-browns. Some are bicolors. The blooms are up to 4½ inches wide.

Toto is especially dwarf – less than a foot tall. It is suitable for containers. The blooms, which are two to three inches across, have pure yellow petals.

Double flowering gloriosa daisy varieties that beekeepers should avoid include Double Gold and Goldilocks.

**Great coneflower (*Rudbeckia maxima*)**

One of the tallest black eyed susans, this bold upright perennial can reach nine feet or so in height. About two feet wide, this is a stiff, robust plant. The blue-green, oval leaves have a leathery texture. The foliage is nearly a foot in length.

Somewhat droopy, the yellow to deep gold blooms are up to six inches across. The cone is brown. The flowers open from late Summer into the Fall.

This species is most common in the South. However, its range stretches westward to Missouri and into the Southwest. This is found in open places and waste ground. It is recommended for zones four through nine.

**Shining coneflower (*Rudbeckia nitida*)**

This upright, smooth stemmed perennial can reach six feet in height. Quite wide spreading, it can be three feet across. The stems are much branched. The rounded leaves, which can be toothed, reach six inches in length. The yellow blooms, up to four inches in diameter, have green cones. The petals are reflexed.

Native from Georgia to Texas, it is recommended for zones four through 10.

There are several outstanding varieties and cultivars of shining coneflower Autumn Glory is an excellent choice for bee gardens. It is named for the golden petals.

Autumn Sun or Herbstonne is considered one of the best cultivars of shining coneflower With branching upright stems, this grows from five to six feet in height. Forming a clump, it has a spread of three feet. The oval leaves can be lobed or toothed. The foliage is six inches long.

Particularly floriferous, Autumn Sun is literally covered with blooms. The slightly reflexed, lemon yellow petals surround vivid green centers. As the blossoms age, the cone can become yellowish-brown. The blooms, which are five inches in diameter, open from August through

October This cultivar is recommended for zones three through nine.

Because Goldquelle has double blooms, it isn't a good choice for beekeepers.

**Showy coneflower (*Rudbeckia fulgida*)**

Also known as black eyed susan and orange coneflower, this species has branched stems that are often hairy Though there are dwarf forms that only reach a foot or so, this is usually about 2½ to three feet tall and two feet wide. Over time the plants can form huge clumps. These usually spread easily in rich soils.

The hairy foliage has long petioles. The basal leaves tend to be wider and larger than the upper ones – up to five inches long. Often hairy, the foliage can be sparsely toothed.

The flowers, which are three inches across, have reflexed or drooping petals. About a dozen or so in number, the petals are orange-yellow. The raised or columnar cones are black or brown. Showy coneflower starts blooming in late July and continues into September

This species frequents woodlands. Thriving in sunny and shady sites, it occurs in both wet and dry habitats. The plant is found from New York to Indiana southward to Kentucky, Virginia, and North Carolina. It is hardy in zones three through nine.

Several varieties/cultivars of this species are available. One improved form is called Goldsturm. Unlike some perennials, Goldsturm rarely needs dividing because the center doesn't die back. This cultivar is 2½ to 3½ feet in height and two feet wide. Its blooms are up to four inches across. The petals are orange-yellow. This is one of the named cultivars that come true from seed. Goldsturm is sometimes misspelled Goldstrum. It was named Perennial of the Year for 1999 by the Perennial Plant Association.

*Rudbeckia goldsturm*

**Sweet coneflower (*Rudbeckia subtomentosa*)**

Also called sweet black eyed susan, this branching species has an upright habit. It reaches two to five feet in height with a spread of a foot or so. All parts of sweet coneflower are covered with soft gray hairs.

The foliage, which has three lobes, can be three to six inches in length. Sometimes with toothed edges, the leaves can occur in threes.

The petals are bright yellow, while the cone is dark brown or purplish-brown. With two dozen petals or so, the blossoms reach three inches across. These open from August until frost. The plant is named for the anise-like scent of the blossoms.

Sweet coneflower is found in low ground and prairies over much of the Midwest. Its range extends southward to Louisiana and Texas. It does well in zones four through seven. BC

*Connie Krochmal is an award winning garden writer and a beekeeper in Black Mountain, South Carolina.*

# SPREAD THE WORD

***Now that your newsletter is done, it's time to get it in the hands of your members.***

Ann Harman

Your newsletter is all finished. It has a well-designed and interesting appearance. You – and a proofreader – have combed it for typos. The articles are timely What next? Well, it is ready to be sent to members of your association to bring them news and information about their bees and beekeeping.

Someone in your association maintains a membership list. A very large association may have a professional to take care of that. A complementary copy of your newsletter should also go to Cooperative Extension Service agents in your state and local area. Do you include nearby local and state beekeeping associations? Has the local Master Gardeners group shown any interest in it? Does your local library want to post the current copy on their bulletin board? You may think of other complementary additions to your list. Don't forget to send a copy to the two beekeeping journals!

If you are both the newsletter editor and the person maintaining the list you will have to work closely with those in your association who are receiving dues, new members and recording addresses and even e-mail information. After all, the newsletter is the reason why some belong to an association. Keeping track of mailing address changes is usually not a big problem. But keeping track of e-mail address changes is really an enormous problem. People change e-mail addresses as often as they change their socks.

We are living in an age where many people are glued to their computer except for football games that are watched on big-screen televisions. Several mini- worlds exist in this new one. There are those who prefer a newsletter via e-mail; those, not so computer-glued that prefer snail mail; and then there are those like me. I live in a sparsely-settled, mountainous region where high-speed Internet has not arrived and even cell phones work only at certain spots. A lengthy newsletter, even in a pdf format, takes approximately forever for my computer to digest before it spits it onto the monitor Snail mail is the only choice for me.

So even if you send the majority of your newsletters via e-mail, you will always have to snail mail some. Now jump back over a paragraph. You notice that I said people change e-mail addresses and now you find out that you are the last to know. A newsletter bounces back as undeliverable. You will have to decide how best to handle this situation. You can snail mail a copy with a note inside asking for the new e-mail address. Or you can spend time playing telephone tag to get the new address. Abandoning the project is not an option. That beekeeper paid dues and expects to receive the newsletter

Let's look at e-mail delivery first. You want to send it as an Adobe® pdf file. If you are computer savvy enough to do a newsletter I assume you know how to do this. If you do not have this capability on your computer you may wish to do so. The pdf file is sort of like sending a photo of your newsletter The newsletter that is received cannot be changed by the recipient but you do not have to worry about color, font, format and other attributes. The nice thing about sending a beautiful newsletter by e-mail is that it can have color, drawings, photos, whatever you wish within reason.

If you do not use a pdf file but send it in some other version be prepared for numerous hiccups. You, the editor, may be using a font that is received by some as scribble. Or your format may be received in a format you never intended. And I return to the possibility of a very slow receipt by those without high-speed Internet. Photos and diagrams may be a mess. If you choose to send via e-mail you will have to experiment to find out who on your mailing list cannot receive the newsletter

Now let's have a look at snail mail. Grab a jar of your nice honey and head for your local post office. Pick a non-busy time and ask to speak to the Postmaster there about the best way to mail your newsletter You can take a sample of yours so it will be easier for both of you to make decisions. Basically the Postal Service has three categories of mail: *letter*, *flat* that are magazines, and *package* that are things thicker than 1/4 inch. If you are doing flat rate and in the category of magazine, then you know the requirements for postage. We will consider letter rates.

Let's start out with the biggest no-no. **The Postal Service hates staples.** Not the staples inside a magazine but the staples used to fasten folded pieces of paper (like your newsletter) together (I am not talking about the staple in the upper left corner that keeps the newsletter pages from floating around.) The Postal Service has a myriad of machines that move mail along at high speeds. Staples do cause mail jams Don't use staples to hold your folded newsletter together, use tape or sticky tabs.

An interesting note. Staples do add weight, a bit more than tape. That additional weight can cause your newsletter to jump into the next ounce rate. Just 0.1 ounce over means another stamp And postage went up in May! That tip was given to me by my local Postmaster

Guess what. The recipients hate staples, too. Yes, there are the little staple removers but that takes a bit of time and – where is the staple remover? I just set it down here yesterday So you pull the pages apart and snag a finger on the staple left in the paper Now you need a bandage.

The Postal Service suggests ei-

ther tape or the little round stickies, like labels. Now, where to put those? If you want your newsletter to come through the mechanized system unscathed, put **two** stickies on the bottom edge **near the corners**. That placement works for newsletters of two, three or up to five or six pieces of paper Newsletters of 10 pieces of paper would benefit from two additional stickies, one on each of the short edges. Ten pieces of paper, folded, are fairly thick and difficult to fold as flat as possible.

If you are doing a thick newsletter and think that staples will hold everything together, they do! Using a staple remover on them is difficult. Pulling the newsletter apart is difficult and the staples are so embedded in the paper that they have to be carefully removed in order to read the newsletter Very discouraging. Use stickies or tape.

A small newsletter, about two or three pieces of paper, can either be folded in half or folded in thirds. The ones folded in thirds are preferable over the ones folded in half since the machines accept them better

We need to take a quick look at the area of the page that has the recipient's address. The ones that make the machines happy are plain and simple. They contain. label of or printing of recipient's address, return address in upper left corner and stamp. Plain, boring and efficient. You cannot escape the machines. Address areas that are filled with bees flying all around the page, designs, advertisements, and other decorations can cause the machines to become confused and spit the newsletter out. Confusing the machines leads to delay in delivery Keep the area plain and boring. It works!

If you wish the newsletter returned so you can keep track of address changes you add "Address Service Requested" right under the return address. Yes, there is a charge of 75¢ or more for each one returned but you save money in the end because you will not continue mailing to somebody who isn't there any more. Work with your association to correct the address.

Just remember, the Pony Express had to keep their horses happy with hay Today the Postal Service has to keep their machines happy

You may have seen mail with "Dated Material" printed on it. This is a useful way to send a newsletter that has meeting information in it. "Dated" comes in the category of bulk mail, which must be delivered no later than five days after receipt at the local Post Office. However, here is the Catch 22. You must put that "Dated" material into the postal system two to three days before you wish it delivered. The Postal Service can check on the date it went into the system. If you were late, there is no obligation to deliver it promptly so your newsletter now falls into the ordinary bulk rate category It is up to you to plan your mailing dates.

Some associations can consider a bulk rate. You need to be mailing at least 250 pieces at each mailing, but more is better economically There are two categories of bulk rate – that for non-profit associations and those who are not non-profit. You need to go to your local Post Office to set up your account and find out exactly what you need to do. The Postal Service requires you to have adequate money in your bulk mail account – or your newsletter will just sit there until you do have enough. It is important that you determine if either category of bulk rate is economic.

Both categories of bulk rate require you to purchase a permit. Therefore you need to have at least four to five mailings a year to make your reduced postage rates practical. If your association is non-profit you will have to show proof in order to obtain the permit. The Post Office will give you the exact wording and instructions for your "stamp."

Oh, you did give that jar of honey to your Postmaster as thanks for all the information on mailing your newsletter

So much to think about with snail mail. No wonder associations are asking their members "how about receiving an e-mail newsletter?" You certainly can offer them a trial e-mail period and explain that their meeting information will be received in a timely way and they can print out all or parts of the newsletter for future reference. You can also remind them that sending an e-mail newsletter will probably not cause the association to raise dues to cover increased postage. Beekeepers do like to save money

You have been so successful with your association newsletter that you will certainly be asked to continue as editor – year after year Cheer up and read your future.

THE GOLDEN GATE
I stood at the Golden Gate,
My head was bent and low,
I meekly asked the man of fate,
which way I had to go.
"What have you done?"
St. Peter said,
"to seek admission here?"
On Earth," I said, "I was an Editor
For many and many a year "
St. Peter opened wide the gate,
And beamed on me as well,
"Come in and choose a harp" he said,
"You've had your share of hell." BC

*Ann Harman edits, makes copies, labels, seals and mails newsletters from her home in Flint Hill, Virginia.*

# BEE-HIVE SPICE RACK

Peter Sieling

*Where do bees store <u>their</u> spices? In their spice cabinet, of course.*

The trouble with making cabinets is that they multiply. I wanted a simple wall mounted cabinet for my office. I showed a sketch to my wife, Nancy She pointed to a blank space on the kitchen wall.

"...With a pierced tin door panel and adjustable shelves," she suggested, batting her eyelashes at me. So I made three. Mine has a plain wood door panel. Nancy's birthday present has a pierced tin panel. Her anniversary cabinet has a glass door The best part is that I'm set for gifts until Christmas.

**Procedure:**

1. Plane the lumber to thickness. Rip to width and crosscut all the pieces slightly longer than the final length.

2. Drill a series of shelf pin holes on the inside of the super sides. To make sure they line up, I made a template by cutting a slat the same length as a super side and 1¾"-wide. Starting about 5" from the bottom and ¾" from one edge, mark hole centers every two inches for drilling the front holes. Mark and drill 1" from the opposite edge (for drilling the rear holes, leaving space for the recessed back). Clamp the template flush with the edge of the hive side and drill halfway through. My shelf pins fit a 5mm hole (a 7/32" drill bit works).

3. Assemble the **shallow super**. Check to see that it is square before the glue sets. When the glue has dried, fill the nail holes with wood filler If your super has rabbets rather than finger joints, fasten the corners with 2" brads on the ends so top and bottom will cover them. Sand the corners flush.

4. Make the top and bottom. Cut to length but leave the pieces extra wide until after molding the edges and mounting the face frame. For molding, use a shaper or router cutter Any profile you choose will soften the boxiness of the cabinet. Mold the end grain first. Use another board clamped against the exit side of the work piece to reduce tear out.

5. Make and assemble the face frame. The easiest way to make face frames is with butt joints and a pocket screw jig. Alternatively, you can use a slip joint if you start with stiles the same length as the cabinet width – 16¼" (see directions for making the door). Make the face frame a little oversize. It's easier to trim it to fit than discover that it's a little too small.

6. Glue the face frame to the super Trim it flush with a flush trim router bit, or sand it flush.

7 Cut the shelves to fit.

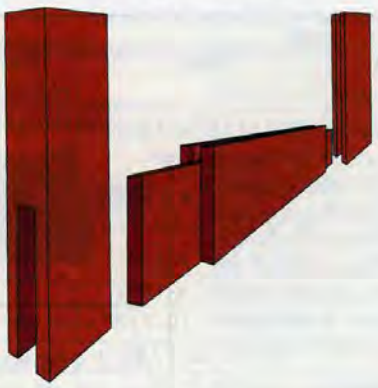
8. Cut door rails and stiles to length slightly larger than the inside dimension of the face frame, then trim the door to fit on a table saw after assembly Mill a ¼"-wide x 3/8" -deep groove down the center of the rails and stiles for the panel. To center it, set the fence as closely as possible to yield ¼" sides, cut the groove and then turn the piece around and cut the same groove starting from the other end. The groove width will be slightly more than ¼", but automatically centered.

9. Cut the stile mortises. Use a tenon jig (see *Bee Culture*, Dec. 2008, p. 62) to cut the open mortise. Don't try free-handing the end over a saw blade. To perfectly center the mortise, set the fence so the saw blade slides into the groove that was made in step 8. Raise the blade to the height of the tenon. After the first cut, turn the board around and repeat the cut. With a 1/8"-thick saw blade, the two cuts result in a ¼" mortise.

10. The easiest way to cut the tenons is to remove the excess wood with the dado blade. Set the blade low. Cut one side. Flip over and cut the other side. Try the fit, raising the blade a small amount and removing more wood until it leaves a tenon the exact thickness to fit snugly into the mortise.

11 Cut the door panel to fit into the grooves on the door Punched tin comes in 10"x 14" sheets and will need to be trimmed to fit. Because it's thin, cut shims to fit in the grooves to push the metal flat. For a wood panel,

Door Frame Detail



*Cutting door mortise.*

*Cutting door tenon.*

trim the width about so there is approximately 1/8" gap on each side of the panel inside the groove. This allows the floating panel to expand and contract with seasonal humidity changes. You can also substitute ¼" plywood which remains dimensionally stable.

The door should be glied and assembled after painting. Glue only the mortise and tenons, not the panel. Touch up the paint after gluing. This is the best time to finish the cabinet – before assembly. For a traditional milk paint look, I applied two coats of "Redwood Forest" exterior flat latex paint from the Do it Best Historic Color Gallery A coat of paste wax (Make your own: *Bee Culture* July 2008, p. 35.) protects the paint and gives the surface a warm satin shine. Use paste wax when the cabinet is assembled.

12. Fasten the top, bottom. Attach the back inside the frame rest rabbets. I used 5/8"-thick boards, trimmed to fit. ½" plywood will also work.

13. Glue and mount the door Trim it to fit the opening. Mark the position of the hinges and cut the hinge mortises. Paint the trimmed edges.

Traditional hinges require mortising. Attach the knob and catch. BC

| **Bill of Materials** | | | |
|---|---|---|---|
| Part | Description | Size | No. required |
| A | Shallow super | 5-11/16" x 16¼" x 19-7/8" | 1 |
| B | Top/bottom | ¾"x 7¼" x 17¼" | 2 |
| C | Frame stiles | ¾" x 1¾" x 19-7/8" | 2 |
| D | Frame rails | ¾" x 1¾" x 12¾" | 2 |
| E | Door stiles | ¾" x 1¾" x 16½" | 2 |
| F | Door rails | ¾" x 2" x 12-7/8" | 2 |
| G | Door panel | 10" x 12-7/8" | 1 |
| H | Door panel shims | ¼" x 3/8" x 12-7/8" | 4 |
| I | Shelves | ¼" x 5" x 14¾" | 2 |
| J | Back | 5/8" x 14¾" x 19-1/8" | 1 |
| **Hardware** | | | |
| L | Knob | 1¼" diameter | 1 |
| M | Hinges | 1-3/8" x 2" | 2 |
| N | Shelf Pins | | 8 |

**Sources of Supply:**
Pie Safe Tins available at Van Dyke's Restorers, **www.vandykes.com**, phone #800-558-1234.
Paint: Do It Best Corp. check **doitbest.com** to find the nearest store.
Redwood Forest exterior latex flat paint #D044, from the Historic Color Gallery

*The finished spice cabinet.*

*Peter Sieling builds beautiful furniture out of beehives and keeps bees at his home in Bath, New York. Peter will be a workshop speaker at EAS 2009 in Ellicottville, NY Visit www.easternapiculture.org. You can reach him at garresonlumber@hotmail.com.*


# Remote & Safe

Wayne Anderson

This island country in the South Pacific has an important and popular aspect for beekeeping: It's remote.

Located 3,500 miles southwest of Hawaii between Fiji and Australia, most islands of Vanuatu can make one vanishing claim on the planet: they are disease free.

"There are very few places in the world that are disease free," said Gilbert Gibson, who started beekeeping here in 1974. Today this New Zealand transplant runs 90 clean hives.

Here on the Y-shaped island chain, he's laying a business plan to raise queen bees for export around the world. His proposed base of operations will be Erromango, a small island about a half-hour flight from the capital of Port-Vila.

The southerly island is where he can grow a needed and diminishing product in the world: 100% disease-free queens.

"There is tremendous potential," Gibson said. The potential on Erromango is enormous. "There are no bees on it." And any disease known to bees is non-existent on it, he said.

Erromango is like the Garden of Eden, unspoiled and unaffected by diseases – but with a close-by commercial airport.

Although the main island once had some problems with European and American foulbrood, the Varroa mite has never plagued Erromango.

Virgin places on the planet are becoming more and more difficult to find. And as Colony Collapse Disorder, the mysterious disease decimating bees, spreads across North America, the bee industry must find uncontaminated places to raise queens.

The Varroa mite is a main suspect in the cause of CCD, American researchers report.

Gibson, who teaches beekeeping and leads about 20 beekeepers in the community, said he hopes to work "full time" in beekeeping by next year This year he said he produced "1,105 kilos (2,400 pounds) of honey a bumper crop."

Tropical Vanuatu, composed of some 80 islands stretching 500 miles, is slightly larger in area than Connecticut. Inhabited are more than 1,000 species of lush vegetation, including orchids. Its low population of 215,450 makes the favorable, wide-open ratio of land-to-people attractive for queen raisers and business investors.

For more information contact Gilbert Gibson at: gibsonj@vanuatu.com.vu. BC



## Note To A New Apiarist: Keeping Bees

*(with apologies to Paul McCartney)*

When I find my hives with unknown trouble
There's someone to inform me
Speaking words of wisdom. Keeping bees.
And as we fix the problem,
He is standing right beside of me,
Speaking words of wisdom. Keeping bees.
Keeping bees, keeping bees,
I do need a mentor, keeping bees.

And when the broken hive is healthy,
Living for the world to see,
There will be some honey. Keeping bees.
For though *Varroa* tries to kill them,
There is still a chance to be healthy.
You can get an answer, keeping bees.
Keeping bees, keeping bees.
You will need a mentor, keeping bees.

And when the mites are raging,
There's good advice that comes to me
To kill those little cretins. Keeping bees.
You will need a mentor, and
He will have an answer, keeping bees.

I wake up to the sound of buzzing,
Signifying strong, healthy.
There has been an answer, keeping bees.
Keeping bees, keeping bees,
Yes, you will need a mentor, keeping bees.

by William J. Powers

# GLEANINGS

JULY, 2009 • ALL THE NEWS THAT FITS

## SWEDISH BEEKEEPERS DON'T WANT TO GRIN AND BEAR IT

The Swedish National Association of Beekeepers is seeking as cull to protect its members from what it calls "problem bears" that are raiding hives.

The association has written to the government saying beekeeping and honey production have boomed in recent years and become a key tourist attraction in rural Sweden and the industry needs a protective hunt.

It says only about 3% of the brown bear population are "problem bears" and the cull is needed to ensure the bad habits do not spread and are not passed down to future generations.

The bears are found from the far north of the country to as far south as Närke, 70 miles southwest of Stockholm.

The association says only 6% of apiaries are in northern areas of Sweden and there's room for expansion, if only the bears can be kept away from the bees.

The association also wants a change in the law covering compensation for damage by wild animals.

Most beekeeping operations are small time hobbies, but National Environmental Protection Agency rules only allow beekeepers to win compensation for damages caused by wild animals if their operations are run as an industrial operation.

*– Alan Harman*

## BRITISH SEE NATIVE BLACK BEE AS INDUSTRY SAVIORS

The Co-operative Group Ltd. says it is giving £10,000 ($15,456) to the Bee Improvement and Bee Breeders' Association project to seek out and map locations of native black honeybees and their hybrids in the United Kingdom.

The association believes the hardy British variety *Apis mellifera* mellifera, with its better ability to cope with the British weather, could help reverse the dramatic 30% decline in honeybee numbers in the UK.

While pesticides have been implicated in the declining bee population by some experts, others believe the problem is made worse by beekeepers use of a foreign, poorly suited, subspecies of honey bee from Southern and Eastern Europe.

The black bee was used for centuries as the honey-producing bee but was replaced by more productive bees from Italy and eastern Europe in the 19th century.

They believe *Apis mellifera mellifera*, which is likely only to be found in remote parts of the country, could hold the key to survival of the entire population.

Native black honey bees are considered by some beekeepers to be more aggressive and poorer at producing honey than foreign strains. However, over tens of thousands of years, the native black honey bee has evolved thick black hair and a larger body to help keep it warm in a cooler climate, and a shorter breeding season to reflect the UK Summer. With careful selection they are good tempered and good honey producers.

"The hardy native black honey bee has had a bad press over the years but it may hold the key to reversing the decline in the UK's honeybee population," Cooperative Group head of social goals Paul Monaghan says.

"There are isolated populations of the native black bee dotted around the country and we want to help to confirm these and map these populations.

"We would also like to help to develop a breeding program that would increase the number of native colonies and hopefully help reduce the losses experienced in recent years"

Beekeepers who think they have native or near native black honeybees will be asked to send samples to the association, which will carry out tests to determine their origins. Members of the public who think they may have seen a native black bee are asked to take a photograph and e-mail it to the coop.

Association chairman Dinah Sweet says the new program is a much needed and long overdue research study that could possibly help unlock the answer to the potentially catastrophic decline in the UK honeybee population.

"However, we have to identify where they can be found so that we can use them to expand the number of native black honey bee colonies and make them more available to beekeepers," Sweet says.

The association's program coincides with a £100,000 ($154,492) study at Sussex University which aims to breed black bees more resistant to disease.

*– Alan Harman*

## SPRAYING KILLS $15,000 WORTH OF BEES IN COLORADO

Beekeepers in Colorado's Grand Valley have called for a ban on aerial spraying of pesticides after a crop duster killed at least $15,000 worth of bees.

The Grand Junction Daily Sentinel reports there is a buzz of a range war between beekeepers and alfalfa growers.

The bees died after Olathe Spray Service Inc. spent three days spraying alfalfa fields for alfalfa weevil.

"I lost $15,000 worth of bees in three days," Great Harvest Bread Co owner Chad Ragland tells the newspaper. "They got hit pretty hard because of the spraying schedule.

"I am so demoralized. I am so scared to tell my wife that."

Ragland started keeping honey bees three years ago to cultivate honey for his bread.

Pilot Leonard Felix, co-owner of Olathe says he's "terribly sorry" Ragland lost his bees.

"We sure don't want to do that," Felix says. "We work all the time to try and mitigate those issues."

He says he won't be spraying again in Mesa County.

"I don't need to work down there," Felix says. "I was just doing it because those guys were in a pinch. I was making a living before Grand Junction, and I can do it without again."

Grower Troy Waters, who raises alfalfa on more than 1,000 acres, says the incident has been overblown and he is upset beekeepers might chase the last aerial spraying service out of town.

Waters keeps thousands of leafcutter bees on his property.

"If anybody's livelihood depends on bees for pollination, it's me," he says. "There is no reason everybody can't get along."

Part time farmer Kenneth Palmer tells the newspaper he allowed Ragland to place his hives on his property a few days before the aerial spraying.

"It is probably my fault because I didn't call Chad," he says. "I just made some assumptions that the bees were far enough away, and the alfalfa was not in bloom."

Beekeepers want an embargo on spraying between 9 a.m. and late afternoon, but Felix says if he only sprayed in the mornings, it would take more than a year to cover all the crops in the valley. *– Alan Harman*

Ed Colby

# Rambo Bees

The call from Roger's wife Doris surprised me. "I wonder if you could come down and pick up your bees," she said. "Roger keeps getting stung!"

I was planning on doing this anyway, the sweet cherry bloom having finished in Grand Junction. But her call took me aback. The year before, Roger asked if I couldn't leave my little darlings all Summer I explained that, living 70 miles away, this simply wasn't practical.

My pollination hives grow fat on fruit blossoms and dandelions, and pushing them up with a hand truck onto my truck can be a challenge.

I knew Woody was around, and he and I go way back. He owns a home in Grand Junction, but he's hardly ever there. Ever since Mae died, he's been a rolling stone. Mostly he's on the Bering Sea or up some Far North river, hauling freight on his 100-foot converted Navy landing craft. Or he's in Thailand visiting his "gal." The rest of the time he's on vacation.

I asked Woody if he might like to help me move the bees at Roger's, meaning give me a push or a pull up the ramp if I needed one.

"There's a catch," I said. "I've got a Rambo hive at Roger's. But I'd put you in a bee suit."

"What do you mean, a *Rambo* hive?" he said.

"They've got attitude," I said. "When I loaded the little darlings onto the truck, they came out to the hive entrance, and snarled at me."

I made a face, curled my fingers like claws and went, "Rrrrrrr!"

Woody seemed amused. "Would you do that again?" he said.

"They did the same thing when I dropped them off," I said, "Then when I came down to put on a honey super, they flew out at me and bounced off my veil. They're troublemakers, and I wish I'd never taken them down there."

The bees were only half the problem. Roger's little orchard is completely surrounded by the city of Grand Junction, and the neighbors are right next door It's not ideal. I rent Roger bees because he'd up until now been an enthusiastic customer, and because his checks are good.

When Woody and I stopped by to pick up the bees in the twilight. Roger was chatting with a neighbor in the backyard.

"How'd you make out with all that cold weather?" I cheerfully queried.

"I might get enough fruit to cover my pollination fee," he said dryly

I said, "I understand the bees gave you a hard time."

"Oh, yeah," he said. "I got stung three times and a neighbor once. I never had this problem before."

Roger seemed a little testy about the whole cherry/bee situation. He got froze out, stung on his own property by my bees, and now he owed me money I tried to smooth things over

"I brought you a mean hive, I guess," I said. "Sorry about that."

"How far away do you keep those other bees?" he said.

"A couple of miles," I said. I rented to another grower at the edge of town.

"And how far did you tell me bees fly?" he continued.

I didn't like the sound of this.

We got the bees loaded without incident. Once they were home I promptly forgot about their disagreeable disposition. I was frankly more concerned that this strong colony might swarm. I made a division and took the stronger split to an out yard. I'd look for eggs later to determine which half was queenless. This isn't the way I normally make divisions. The way I normally make divisions occasionally upsets bees mightily But I have neighbors, and I wasn't looking for trouble.

*Continued on Page 60*