

Queen Expectations . . . 20

Organic Beekeeping . . . 26

Puzzle Pieces . . . 39

Beeyard Safety . . . 49

MAR 2004

Bee Culture



PUBLICATIONS

Catch The Buzz

www.beeculture.com



Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

MARCH 2004 VOLUME 132 NUMBER 3



Bee & Beekeeper.

photo by Bill Mondjack

FEATURES

QUEEN EXPECTATIONS 20

There are a multitude of reasons why queens fail – some we can control.

Larry Connor

NEW TECH COMB HONEY FRAMES 24

No muss, and very little fuss.

Maribeth Fitts

ORGANIC BEEKEEPING 26

It's time we examine our actions, and their consequences.

Gunther Hauk

KIDS 'N BEES 28

Things to do and how to do them.

Kim Lehman

THE STATUS OF FORMIC ACID IN THE U.S. 37

Way more effective than powdered sugar for treating Varroa, but just as legal?

Bill Ruzicka

PUZZLE PIECES 39

Research answers to questions we all have.

Kim Flottum

BOTTOMLESS BEEKEEPING 41

The virtues of no bottom at all are worthy of note.

Charles Martin Simon

KIDS AT BEE MEETINGS 46

Beekeepers of the future or forced participants?

James E Tew

BEEYARD SAFETY 49

Knowing how to handle emergencies in a beeyard from an EMT expert.

Bill Owens

800.289.7668 • www.BeeCulture.com

Publisher – John Root

Editor – Kim Flottum, Ext. 3214, kim@BeeCulture.com

Production Coordinator – Kathy Summers, Ext. 3215, kathy@BeeCulture.com

Circulation & Advertising – Dawn Feagan, Ext. 3220, dawn@BeeCulture.com

Contributors

Steve Sheppard • Mark Winston • Clarence Collison

Ann Harman James E. Tew

Malcolm T. Sanford Wyatt Mangum

Subscription Information

U.S., one year, \$21.50; two years, \$41. Newsstand price: \$3.50. All other countries, (U.S. Currency only), \$15.00 per year additional for postage. Send remittance by money order, bank draft, express money order, or check or credit card. Bee Culture (ISSN 1071-3190), March 2004, Volume 132, Issue 3, is published monthly by The Root Candle Co., 623 W. Liberty Street, Medina, OH 44256. Periodicals Postage Paid at Medina, OH and additional mailing offices.

Advertising

For information on placing display advertisements, contact Dawn Feagan in our Advertising Dept. 800.289.7668. Ext. 3220

POSTMASTER: Send address changes to BEE CULTURE, The A.I. Root Co., 623 W. Liberty St., Medina, OH 44256

Published by The Root Candle Co. Copyright© 2004 by The Root Candle Co. All rights reserved.

Bee Culture The Magazine of American Beekeeping
is



on



Recycled Paper

DEPARTMENTS & COLUMNS

MAILBOX	5
THE INNER COVER	8
<i>Weather Stupid tricks. Thanks, Jim</i>	
	Kim Flottum
HONEY MARKET REPORT	10
RESEARCH REVIEWED	13
<i>Fundamentals of grooming behavior a measure of resistance.</i>	
	Steve Sheppard
HARDWARE	15
<i>Hardware was nowhere to be seen, but Restoration Hardware is full of linens, furniture, shower curtains, and pillows, many adorned with a trademark bee logo.</i>	
	Mark Winston
DATABASES AND BEEKEEPING	17
<i>What is a database?</i>	
	Malcolm T Sanford
BEE CULTURE'S BEEYARD	32
<i>There are a variety of ways to feed bees – no matter what time of year it is.</i>	
	James E Tew
PLANNING MEETINGS - PART 3	52
<i>The finishing touches are just as important as those you made months ago.</i>	
	Ann Harman
DO YOU KNOW?	55
<i>What do you know about honey bee genetics?</i>	
	Clarence Collison
GLEANINGS	57
<i>All the news that fits.</i>	
CLASSIFIED ADS	61
BOTTOM BOARD	64
<i>This story is true. Recalls are cheaper than bad press.</i>	
	James Fischer

From Our Authors...

Past & Present

Mark Winston

Biology Of The Honey Bee, **\$23.49**
 281 pages, black & white, soft cover
 From Where I Sit, **\$20.45**
 171 pages, soft cover



Roger Morse

ABC & XYZ, **\$32.50**
 516 pages, hard cover, black & white
 New Complete Guide To Beekeeping, **\$17.49**
 207 pages, soft cover, black & white
 Making Mead, **\$20.45**
 127 pages, soft cover, black & white
 Rearing Queen Honey Bees, **\$17.45**
 128 pages, soft cover, black & white
 Honey Bee Pests, Predators & Diseases, **\$43.00**
 718 pages, hard cover, black & white
 Beeswax, **\$12.50**
 192 pages, hard cover, black & white
 Honey Shows, **\$10.00**
 35 pages, soft cover, black & white



Dick Bonney

Beekeeping,
 A Practical Guide, **\$20.50**
 184 pages, soft cover, black & white
 Hive Management, **\$17.99**
 152 pages, soft cover, black & white

Richard Taylor

The How-To-Do-It, **\$17.45**
 320 pages, soft cover, black & white
 Joys of Beekeeping, **\$7.50**
 160 pages, soft cover, black & white
 Beekeeping For Gardeners, **\$3.95**
 52 pages, soft cover, black & white
 Best Of Bee Talk, **\$9.99**
 147 pages, hard cover, black & white
 Comb Honey Book, **\$12.50**
 124 pages, soft cover, black & white



Jim Tew

Beekeeping Principles, **\$19.00**
 245 pages, soft cover, black & white

Clarence Collison

What Do You Know, **\$39.95**
 432 pages, soft cover, black & white



All Books Postpaid in U.S.

Root Publications (a division of The Root Candle Co.)
 623 W. Liberty St., Medina, Ohio 44256



800.289.7668



KEEP IN TOUCH

Write: Editor, 623 W. Liberty St.,
Medina, OH 44256

FAX: 330-725-5624

EMAIL: KIM@BEECULTURE.COM

Double Deep Confusion

In response to Doug Branch in the Jan. '04 Mailbox, he states that it is rare for bees to move down unless on a continuous comb as in the wild. This was my belief also.

Two years ago, I became acquainted with Walt Wright and read his articles on bee behavior learned from observing wild bee stock. He mentioned that the bees have an inclination to move down as they would in the wild IF they are given the opportunity.

Always liking a good experiment, I decided to test his information. Last Spring (03) I hived four packages of bees and when they had filled out their first deep I started my study. Each hive received two boxes of drawn

frames, one above and one below them. I wondered whether they would choose to go up or down and I personally thought up. In all four cases the bees went *down* and filled the bottom deep before heading back up through the original deep and eventually on up into the upper deep. This surprised me, but it does make sense from the standpoint of heat rising.

This heat generated from the cluster in the bottom deep would help keep the sealed brood in the deep above it warm.

Doug, are you quite certain that bees natural movement is UP? I am not so certain any more.

*Colleen Howe
Friday Harbor, WA*

I find Doug Branch's comments concerning Walter Wright's article about double deeps somewhat confusing. He states, "Now they will move down if they have a continuous comb such as in the wild, a tree etc., but their natural movement is UP."

I have been observing bee behavior on natural comb in a top bar hive. You can read about it and see some pictures at www.geocities.com/usbwrangler.

Although I have approached my observations from a small cell prospective, my observations match much of what Walter Wright has described. The broodnest is much more than just a place to lay eggs. Nest architecture, which includes such param-

Continued on Next Page

Bees In Albuquerque



At the 2003 International Balloon Fiesta in Albuquerque, NM this pair of Brazilian Bees made their maiden voyage. They start off holding hands, but eventually separate and fly as two separate balloons.

*Myron Farnham
Sutter Creek, CA*

Mountain Grey Caucasian

Contact us for your 2004
Queen Orders!

Bolling Bee Farms
Greenville, Alabama
Since 1925

334.382.6878
www.bollingbee.com

SUBSCRIBERS OUTSIDE THE U.S.

Renew your subscription today and avoid missing any issues (Expiration date is located on the right hand side above your name on your mailing label.)

See example below

23456 (acct.#) 03/02 (exp. date)
John Brown
123 Water St.
Toronto Ontario X1X 2Y2
Canada

Please pay in U.S. Funds.

RUFER'S EAST TEXAS QUEENS

Quality Deep East Texas Queens

We have the newest University of Minnesota Hygienic/SMR stock
Fumidil Fed Regimen - Excellent Drone Population

Shipping starts March 20th
(50 queen minimum)

Call Us If You Need
Brood In East Texas

P.O. Box 394, Hemphill, TX 75948
409.787.2783

3499 75th St. SW, Waverly, MN 55390
763.658.4036

MAILBOX

eters as volume, structure, orientation and cell size, is very important to bee health.

Others besides Walter Wright and myself have noticed the importance of an uninterrupted broodnest. Brother Adam was one that comes to mind. His equipment was sized to prevent it.

I would encourage everyone to observe what the bees do naturally. Then evaluate the effects of equipment and the management practices used against the bees natural behavior.

The bees in my top bar hive and in my small cell colonies do not move upward. They move downward into the small cell core of the broodnest. And they stay there, unless starving, until brood expansion occurs in late Spring. The dynamics and volumes described by Wright pretty much match what I have observed in Wyoming.

I think far too many beekeepers have practiced forms of bee husbandry that are assumed to be quite natural. Yet, when confronted by what the bees do when left to themselves, down becomes up and nature becomes unnatural.

Dennis Murrell
Casper, WY

NUMBERS
No Surprise Here. 84% of *Bee Culture* readers garden. Of these, 93% grow veggies, 47% ornamentals, 46% honey plants, 46% herbs and 68% fruit trees.



AFFORDABLE ROUND COMB SECTION EQUIPMENT BY ROSS ROUNDS, INC.

Our popular, low cost and easy-to-use round comb section equipment is recommended by commercial beekeepers and can increase your profits. Get the most from your bees!

To purchase, contact your dealer.
For more information
call toll-free: 877.901.4989


ROSS ROUNDS™
www.rossrounds.com



2004 Prices Gardner's Apiaries Spell Bee Co.



PACKAGE BEES AND QUEENS
510 Patterson Road • Baxley, GA 31513
Ph: (912)367-9352 Fax: (912)367-7047



Over 100 Years of Experience • All Bees are State Inspected

ITALIAN HYBRID QUEENS

25 & Up\$7.75 ea.
10-24\$10.00 ea.
1-9\$12.00 ea.

BUCKSHOT QUEENS

25 & Up\$.8.75 ea.
10-24 .. .\$.11.00 ea.
1-9\$.13.00 ea.

PACKAGE BEES with queen

2 lb.\$31.00
3 lb.\$36.00

Queens clipped or marked add \$1.00 each. • Riteway Queen Shippers upon request.
Please call or write for shipping details or truck prices.
Terms: 10% down. Balance due 2 weeks prior to shipping.



INNER COVER

If you were wondering how dry it is, there's a place you can find out. The USDA monitors drought at it's weather and crop web site - <http://drought.unl.edu/dm>, that shows current drought levels across the U.S. It's not the dust bowl yet, but there's some in the north central part of the country that would probably argue differently

Having access to information this sophisticated enables you to make better informed decisions about moving to, or from a spot for honey this year. Or, if you're in the middle of the new desert, you can plan accordingly by not spending resources on expansion until it gets wet, or finally move out this year.

The more immediate weather services are equally helpful. The fundamentals of growing degree days are used to predict flowering dates for a variety of crops requiring bee pollination. If that's what you do come April or May it pays to follow their rise so you can anticipate your grower's call. You can usually find these on University Extension or State Department of Ag web sites, or in some places, grower association web sites.

If you're moving someplace, knowing the weather history for the past few weeks can help you prepare by making sure you have extra supers because the season's early, or feeders, because it's late.

If you raise queens you want to know what the weather's going to be during your heaviest mating time. Do you delay grafting and miss that anticipated rainy, windy cold spell? Or plug on, ostrich-like, following the schedule and hoping for the best?

And as a queen buyer, keen interest should be given to the recent history of where that queen spent her mating days. Bad weather can significantly reduce a virgin queen's mating success or simply reduce the number of times she can mate. Both spell disaster for you and that colony, probably early enough to mess up build up for the main flow. All this information is available on the web.

It's been a tough Winter in lots of places due to the cold. If you were just a tad overzealous last Fall when extracting, feeding this Spring will be more likely. Planning your trips around the rain, and avoiding the muddy roads that result will make that (should-have-been-unnecessary) task more efficient.

We still can't do *anything* about the weather. We can accommodate it, however, if we use the tools we have.

Do you know what's the single most destructive force beekeepers have that causes the greatest loss to insurance companies? It was an eye opener for me. Go ahead, take a guess, I'll wait.

Give up? Careless use of smokers. Really.

Smokers that beekeepers thought were out, and weren't have burned down more houses, barns, trucks and cars than you'd ever imagine. Well, more than I ever imagined anyway.

Careless beekeepers bring a smoker they thought was out,

inside, set it next to something that burns, and, surprise-surprise, when the smoker smolders long enough, it gets hot, the burnable whatever next to it catches fire and it's call 911 and find a new place to live. Or extract honey. Or a way to get to work tomorrow.

Next to structure fires, careless beekeepers and hot smokers have burned up a lot of pastures, crops and woodlots lately, too. Dump it out (so it doesn't burn down the house later) and leave the coals. A breeze, a spark and 50 acres of tinder dry grass or woods are history. Got any idea what it costs to pay for a woodlot that was raised for timber?

High on the list of expensive mistakes is leaving a gate open when going to a beeyard. An open gate is a magnet for cattle. They explore and wander, and when a cow and a car have a too close encounter, guess who loses? First, the cow, then the car owner, then the land owner, but ultimately the bozo who left the gate open. Just guess how much cows cost. And cars. And injured people. And losing a good beeyard.

On that same list is one that's very familiar. It happens every Spring, somewhere. You've heard the stories. They're true, too. Early Spring cleansing flights from a beeyard and those small, yellow spots start showing up. If it's your laundry or the siding on your house, or the hood of your car it's one thing. But imagine having to repaint 30 new cars. Or 25 of those great big, brand new 60 foot self-contained mobile homes.

Honey bee frass (that's delicate for bee poop) is acidic and will ruin paint on a car or any vehicle. It will stain the siding on a house, the sign on the front of a business, and, yes, laundry.

And swarms. Especially if you are in the southwest part of the country where any and every bee is Africanized, whether they are or not.

A swarm call comes in. You, being

Continued on page 54

The Weather
Stupid Beekeeper Tricks.
Jim Thompson.

MARCH - REGIONAL HONEY PRICE REPORT



We asked our reporters in February if they had checked bees, and if they had, what they found. And, were they replacing or increasing bees, and queens, and what kind of queens they were ordering.

We also asked about sales so far for bulk, wholesale and retail products.

Of those who had already checked bees (65%, most in central and southern regions, but more than half in the north), 87% said they were in good shape, the rest couldn't tell, or knew they were gone. 54% plan on replacing those lost, or will be increasing, with nearly 80% getting packages this Spring. 95% plan on buying queens this Spring, and here's the interesting fact: 34% Carniolan, 33% Italian, 11% Buckfast, 8% Russian, 8% Minnesota hygienic, 3% local, 3% SMR and 1% Caucasian.

There's two ways to look at sales. The first is by category. For bulk products (pails and drums), 35% reported increased sales, 51% unchanged and 14% unchanged. For retail sales, 35% reported increased sales, 43% unchanged and 22% reduced.

The second way is to look at each sales category - increase, same or reduced. For those reporting increased sales, 25% report increased sales for bulk, 34% for wholesale, 41% for retail.

Those with unchanged sales; 27% had unchanged sales for bulk, 36% for wholesale and 37% for retail.

Those who reported reduced sales, 21% reported reduced sales for bulk, 28% had reduced sales

in wholesale, and 52% had reduced sales in retail.

Take home here is that, in spite of the price increases, sales have for the most part remained unchanged or actually increased, especially in the retail sector.

Region 1
prices up across the board since last month.

Region 2
Prices up across the board since last month.

Region 3
Bulk prices up, pails unchanged, wholesale and retail up.

Region 4
Bulk, pails and wholesale prices unchanged, retail down since last month.

Region 5
Bulk, pails and wholesale prices unchanged, retail down since last month.

Region 6
Bulk and pail prices up since last month, wholesale and retail soft to down.

Region 7
Bulk, and pail prices steady, wholesale and retail down.

Region 8
Bulk and retail prices up since last month, pail and wholesale steady.

Region 9
Bulk prices up a bit since last month, steady for all the rest.

Region 10
Bulk and pail prices steady, wholesale and retail down.

Region 11
Bulk and pail prices steady since last month, wholesale and retail strongly up.

Region 12
Bulk and pail prices steady, wholesale way up, retail steady.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.
Extracted honey sold bulk to Packers or Processors																
Wholesale Bulk																
55 gal. Light	1.45	1.59	1.45	1.33	1.40	1.50	1.52	1.65	1.50	1.48	1.35	1.38	1.33-1.65	1.47	1.37	1.32
55 gal. Amber	1.31	1.38	1.31	1.18	1.05	1.28	1.38	1.43	1.13	1.25	1.38	1.18	1.05-1.43	1.27	1.23	1.17
60# Light (retail)	101.25	104.76	102.68	90.00	110.00	95.00	110.57	97.64	110.00	97.00	110.00	107.50	90.00-110.57	103.03	101.80	90.58
60# Amber (retail)	106.67	96.56	95.49	90.82	89.80	85.00	107.00	95.00	100.00	82.50	108.00	85.00	82.50-108.00	95.15	97.74	84.34
Wholesale Case Lots																
1/2# 24's	39.60	36.02	37.32	35.24	37.32	32.50	36.76	37.32	48.50	35.76	26.50	47.41	26.50-48.50	37.52	37.00	32.83
1# 24's	54.54	52.67	60.00	51.41	57.80	56.00	59.16	58.96	51.25	55.92	69.75	69.32	51.25-69.75	58.07	57.24	53.15
2# 12's	51.72	49.03	58.80	48.30	51.26	48.00	52.20	54.30	46.80	45.92	60.00	61.00	45.92-61.00	52.28	49.57	47.90
12 oz. Plas. 24's	48.73	46.52	53.50	42.00	52.30	48.00	50.96	46.86	47.20	49.49	49.40	53.04	42.00-53.50	49.00	44.88	44.59
5# 6's	50.87	58.64	58.87	51.00	58.87	55.00	57.59	50.75	51.50	53.32	51.25	62.75	50.75-62.75	55.03	51.74	51.23
Quarts 12's	52.75	100.35	84.00	62.85	74.36	80.00	79.17	73.10	72.00	82.96	87.13	88.50	52.75-100.35	78.10	77.77	70.09
Pints 12's	60.00	49.95	54.60	36.25	51.36	44.00	44.80	42.78	43.17	59.00	45.00	57.00	36.25-60.00	48.99	46.61	47.07
Retail Honey Prices																
1/2#	2.19	2.51	2.59	2.36	2.10	2.50	2.15	2.39	2.25	2.72	3.10	2.94	2.10-3.10	2.48	2.46	2.29
12 oz. Plastic	2.80	2.93	3.89	2.82	3.10	2.91	2.81	3.20	2.99	3.09	3.40	3.26	2.80-3.89	3.10	3.02	2.94
1 lb. Glass	3.29	3.60	3.95	3.60	3.20	3.12	3.47	4.02	4.20	3.79	4.14	4.17	3.12-4.20	3.71	3.70	3.56
2 lb. Glass	6.13	5.82	6.49	5.58	5.60	4.33	5.39	6.34	6.08	6.88	5.56	6.63	4.33-6.88	5.90	5.92	5.67
Pint	6.42	7.50	5.95	4.15	5.99	4.50	4.85	5.33	4.97	6.58	5.46	5.95	4.15-7.50	5.64	5.48	5.33
Quart	8.58	7.05	9.50	7.15	7.29	9.00	8.52	8.30	8.50	10.25	10.28	9.83	7.05-10.28	8.69	8.80	8.42
5 lb. Glass	12.50	12.35	13.36	12.63	10.84	11.00	12.06	14.90	11.30	13.16	14.76	13.34	10.84-14.90	12.68	11.93	11.79
1# Cream	4.31	4.91	4.53	4.30	4.53	3.65	3.95	4.48	4.95	4.85	4.62	4.02	3.65-4.95	4.42	4.52	4.08
1# Comb	4.50	4.13	4.20	4.98	4.58	4.00	4.82	4.74	4.58	6.00	6.25	5.38	4.00-6.25	4.85	4.79	4.43
Ross Round	4.25	3.62	3.60	4.40	4.59	4.59	5.15	4.59	5.00	5.85	5.31	4.75	3.60-5.85	4.64	4.15	4.10
Wax (Light)	2.25	2.55	2.00	1.48	1.20	1.10	2.25	2.17	2.15	2.53	2.62	2.17	1.10-2.62	1.79	1.33	1.88
Wax (Dark)	1.75	1.07	1.08	1.35	1.10	1.05	1.84	1.00	1.00	2.45	1.85	1.15	1.00-2.45	1.56	1.25	1.95
Poll. Fee/Col.	52.33	41.00	37.50	33.50	35.00	40.00	41.14	40.00	30.00	42.86	55.00	48.50	30.00-55.00	41.40	40.32	39.27

RESEARCH REVIEWED

Explaining • Defining • Using

Steve Sheppard

"Fundamentals of Grooming Behavior, A Measure of Resistance."

The tracheal mite, *Acarapis woodi*, has been on the beekeeping scene in the US for about 20 years. This tiny mite spends much of its life within the breathing tubes or tracheae of adult honey bees. However, after adult female mites are produced they leave the relative safety of the tracheal system, crawl

around on the outside of their host and "jump ship" onto a new adult bee. They then must find their way into the tracheal system of the new host and start their own reproductive life. Although the mites are

susceptible to beekeeper applied chemical controls (such as menthol) while in the tracheal system, it is during the period spent outside the body of the honey bee that they are vulnerable to direct action by honey bees themselves. Previous research has shown that "grooming" by honey bees is related to the level of resistance the bees have to tracheal mite infestation. When grooming, honey bees brush their middle pair of legs over the thorax and dislodge tracheal mites that may be in the external or phoretic phase of life. While the importance of this self-grooming in mite resistance has been shown, there has been little direct observational evidence of the behavior at the level of the individual mite and bee. In a recent paper, researchers at the USDA-ARS laboratory in Baton Rouge, LA con-

ducted a set of experiments with individual mites and honey bees to gain insight into this resistance mechanism. (Danka and Villa, 2003)

Drs. Danka and Villa set up two observation hives populated by honey bees that were uninfested by tracheal mites. Prior to making observations, the researchers added marked workers from two genetically distinct lines of bees to each hive. The honey bee lines had been previously selected by the researchers such that one line was resistant to tracheal mites and one line was susceptible. Following introduction of the marked bees, observation trials were conducted over a three-day period and the experimental procedure was repeated six times. A trial consisted of the researcher infesting individual honey bee workers with adult tracheal mites and observing each bee for seven minutes to determine whether grooming occurred or not, which side of the thorax was groomed (relative to where the mite was released) and the time of initiation of the grooming behavior. To infest the worker, the researchers collected a fresh adult female mite from an unrelated dissected tracheal system, transferred it to the end of a human eyelash (affixed to a small stick), and then released the mite onto one side of the thorax of the bee. At the end of the seven minute observation period, the bee was captured and carefully examined under magnification in an effort to locate the mite. Control observations were made on honey bees that were touched by the brush in a similar manner but without inclusion of a mite. A total of 555 marked bees were observed throughout the trials.

The researchers observed that a greater fraction of the resistant than non-resistant honey bees

groomed themselves (62% vs. 49%, statistically significant). They also found that the resistant bees groomed themselves more often on the treated "side" (where the mite had been released) than did susceptible bees (51% vs. 37%, statistically significant). Bees that groomed themselves typically started after 2.5 to 3.5 minutes, regardless of genetic line. Grooming significantly reduced the number of mites that were recovered irrespective of genetic strain (24% of the mites were recovered from groomed bees and 39% of the mites were recovered from non-groomed bees). Overall, when bees groomed there was no difference in the success of mite removal between resistant and non-resistant honey bee lines. The act of grooming itself appeared to be responsible for the removal of the mite from an individual. The higher level of grooming behavior (or lower threshold required to initiate the behavior) appears to underlie the difference in susceptibility between the two genetic strains of honey bees. Control honey bees groomed at a level that did not differ between the two genetic strains of bees nor was grooming related to the side of the bee where the brush had touched. The authors concluded that resistant bees were more responsive than susceptible bees to the presence of a mite but not to being touched by a brush.

The research presented by Danka and Villa in this paper provides clarification of the nature of a resistance mechanism that may be of fundamental importance in producing genetic stocks that can be maintained without miticide treatment for tracheal mites. Through careful observations of individual bees infested with single mites, the authors clearly showed

Continued on Next Page
13



that resistant honey bees groom themselves more persistently and more often on the side where the mite was first released. The authors postulate that resistant bees may have a lowered "threshold" to conduct such grooming behavior. Simply put, the action of a tracheal mite moving on the bee would be more likely to stimulate a resistant bee to initiate self-grooming than it would a susceptible bee. While the present study demonstrated this lowered threshold only in response to the actual presence of a mite (and not the stimulus of the control brush), the authors speculate that it may be possible to use another stimulus, "such as dust", to "easily discern differing levels of resistance among groups of bees". The authors go further and suggest that "A simple assay using a common, inert stimulus would be a useful tool in selection and breeding of tracheal mite resistance". Importantly, the research Danka and Villa report in this paper also provides the methodological underpinning by which they or others could screen materials for suitability as such a stimulus in future studies. **BC**

Danka, R.G. and J. D. Villa. 2003. *Autogrooming by resistant honey bees challenged with individual tracheal mites.* Apidologie 34:591-596.



??? Why use poison in your beehives ???

Use Mite Solution

Double blind studies and thousands of satisfied customers have proven that **Herbal Jelly** applied thru front entrance is all you need

1 Packet treats 10 hive bodies for 1 year - \$18.00

5 Packets treat 50 hive bodies for 1 year - \$75.00

Concentrated Mite Solution

capsules come ready to mix
1 cup treats 25 hive bodies \$11.00; 1 pint \$20.00; 1 quart \$38.00
A calm hive works harder.

Questions? Call 360.225.9631 or email: sltuttle@netzero.net
Tuttle Apiary Labs, 3030 Lewis River Rd., Woodland, WA 98674

EAS 2004

7 Springs • Aug. 9-13
easternapiculture.org

HAS 2004

Lebanon, TN • July 8-10
heartlandbees.com

Manufacturers of Quality Apiary Woodenware

MADE IN THE USA
For Beekeepers By Beekeepers

	9 1/8" Commercial		9 1/8" Budget	
Frames:	1	49	\$.64	\$.54
	50	99	\$.62	\$.52
	100	499	\$.57	\$.48
FULL 3/8" sidebar	500 +		call	call
Wedge or groove top bars				
Groove bottom bar only	6 1/4" & 5 3/8" Commercial		6 1/4" & 5 3/8" Budget	
Interlocking top and bottom bars	1	49	\$.62	\$.52
	50	99	\$.60	\$.50
	100	499	\$.57	\$.47
	500 +		call	call

Coming Soon 8 Frame Woodenware

	9 1/2" Commercial		9 1/2" Budget	
Boxes:	1	49	\$8.55	1 49 \$7.25
Authentic box joints	50 - 249		\$7.90	50 249 \$6.80
Predrilled	250 +		call	250 + call
E-Z grip 6" hand holds	6 5/8" Commercial		6 5/8" Budget	
	1	49	\$5.95	1 49 \$5.00
	50 - 249		\$5.60	50 249 \$4.50
	250 +		call	250 + call
Add \$2.00 per box to each commercial box price for select grade.				
	5 11/16" Commercial		5 11/16" Budget	
	1	49	\$5.00	1 49 \$4.70
	50 - 249		\$4.80	50 249 \$4.35
	250 +		call	250 + call
Bottom Boards unassembled			Inner Covers-assembled	
1-5 \$8.50	6+ \$7.75			1-5 \$6.25
				6+ \$5.75
Telescoping Covers -unassembled				
		1-5 \$12.00	6+ \$11.50	



HUMBLE ABODES INC.

RR #1 - Box 636 • Coopers Mills Rd. • Windsor, ME 04363
FAX 207-549-5512 • email: humbleabodes@prexar.com

For pricing, product availability and ordering call toll free 1-877-423-3269 (877-4 BEE BOX) or 207-549-5501
All prices subject to change without notice
Visa & MasterCard accepted



Mark Winston

Hardware

“Hardware was nowhere to be seen, but Restoration Hardware is full of linens, furniture, shower curtains, and pillows, many adorned with a trademark bee logo.”

could never be a commercial beekeeper. It's not that I don't know how to keep bees. On the contrary, I'm superb at the beekeeping end of things. Give me a hive tool, a few hundred colonies, and a sunny day, and I can out-manage just about anyone.

No, my commercial problem is the other stuff that goes along with commercial beekeeping. Sawing, hammering, tinkering, fixing the fork lift, repairing the broken truck sunk in a rutted path full of mud, that's where I can't hold a candle to the big boys. A beekeeper I certainly am, but a handyman? No way.

Which is a problem, because I love hardware stores. Not hardware stores as in today's chain store big-box extravaganzas, but as in the old-fashioned, wooden-floored, owner-operated kind of hardware store. You old-timers will remember the genre, the place where the owner can find the most obscure type of screw or odd tool hidden in the back, and where we guys can lose ourselves for hours with the possibilities for how-to to become done.

I admit to being an interloper and a charlatan in my picture-perfect hardware store. I can talk a good line while asking the owner's advice about cutting, scraping, sawing, leveling, and measuring. But, I know full-well that if I ever left the store and tried to follow his careful instructions, it would be my fingers that were cut, my knee that was scraped, and me that was leveled,

my back twisted beyond repair

Still, I enjoy a good store, but in my part of the world old-timey hardware stores have vanished, replaced by chain megastores like Walmart “*Always Low Prices*,” Home Depot “*You Can Do It, We Can Help*,” and Home Hardware, “*Home of the Handyman*.” Thus, it was with stunned excitement that I encountered what I thought was defunct, Restoration Hardware, which from its name and old-fashioned entrance I assumed was hardware resurrected.

I should have know better, given that it was on one of Vancouver's Yuppie stroll streets, alongside high-end boutique clothing stores, trendy restaurants, and art galleries. Still, naiveté remains one of my many faults, so I went in expecting to find bins of screws, hammers of every description, and sage advice from a handlebar-mustached and overalled owner

What I found was nothing of the sort, but I did find bees, everywhere. Hardware was nowhere to be seen, but Restoration Hardware was full of linens, furniture, shower curtains, and pillows, many adorned with a trademark bee logo.

It turned out to be a chain of stores, and an exceptionally successful one, feeding the need of those with money to construct their home environment to echo past periods. It was founded in 1979 by a fellow named Stephen Gordon who was restoring his Queen Anne Victorian house in California. He was having trouble finding knick-knacks,

doo-dads, and touches that replicated authentic Victorian.

He and his partners saw the market potential, and Restoration Hardware was born. In their own words, “*At Restoration Hardware, you'll explore an exceptionally well merchandised world of high quality textiles, furniture, lighting, bathware, hardware and amusements. These are products of lasting value, classic design and imbued all with a brand that speaks to superb taste and a free spirited individuality.*”

Taste and individuality, I can vouch for that, but I'm not so sure about the hardware part. Deep, rich leather furniture at a few thousand dollars a seat, 464 thread-count bed linens, nightstands with plinth bases, dovetailed drawers, and antique brass pulls at \$700 each, not quite the handyman specials and certainly idiosyncratic in a hardware store.

They even have a philosophy, something I don't recall from the hardware stores of my youth: “*We want to surround ourselves with what we love. We want to inspire laughter as well as thought. This is more than our way of finding and selling products; it's a way of life we highly recommend.*”

Still, I shouldn't be too critical about their way of life, because this ersatz hardware emporium was overflowing with bees. Walk through their glass-fronted Victorian doors, on to the polished wood floors, past the Chilean cherry mortise-and-tenon joined bedroom furniture col-

Continued on Next Page

“You gotta marvel at how bees continue to inspire those handy with a hammer, saw, chisel, and sewing needle to stick bee motifs on to their handiwork.”

lection, and back to the linens, and you're in the apiary.

Tired? Had enough of lifting heavy honey supers and wearing your propolis-encrusted bee suit? Step into the shower with embroidered bees bumbling across your white-with-flax-or-ivory bee shower curtain, made in Portugal from fine cotton. Step out from your shower and dry yourself with a bee-embroidered bath towel, with the same bees bumbling across the towel dobbie.

And no, I don't know what a towel dobbie is, and bumbling is their pun, not mine, but let's move on to a nap under .

Bee Bedding. I won't even try to write this one better than Restoration Hardware, because their words are sublime: *“Totem of Greek and Roman goddesses, Egyptian pharaohs and a certain French Emperor, the bee has symbolized everything from love and rebirth to industry to divinity. Pretty lofty statements for bedding, but ours handles them with a grace.”*

The bees are embroidered on cotton matelassé with a percale back, and no, I don't know what a matelassé is, or a percale back.

I didn't get it, this yuppie emporium masquerading as a hardware store that sells bee motifs, so I got in touch with Restoration Hardware to ask them “Why bees?”

Apparently Restoration Hardware isn't too clear on that one. A message from me through their web site requesting to make contact with their bee guy led me to Andrea (not her real name) in Customer Service. She's a nice, polite young woman who appreciated my taking the time to contact them, but didn't know about anyone in the company who knew anything about their bee stuff.

Roy in Customer Service was similarly helpful, also knew nothing about bees, but insisted that he would pass my request on to one of his three managers who certainly would be more in the know. I did eventually receive a call from

Susanne who was not Roy's manager but lived in another Restoration Hardware department. She also was not in the bee loop, but was very pleasant, and promised to track down their bee guru.

I guess he's kind of busy these days restoring or renovating or something like that, because the Restoration Hardware handyman/beekeeper wasn't able to tell me much. He did say “We chose the bee motif because it is a classic design. Our customers respond well to higher end fabrication and patterns, and this program has been very successful for us.”

I'm wondering if perhaps Restoration Hardware should have hired a consultant from outside the restoration family with a bit more bee savvy, and I'm admittedly jealous they didn't consider me. After all, any store that can sell a \$329 King-size duvet cover swarming with embroidered bees representing totems of Greek and Roman goddesses, Egyptian pharaohs, and a certain French emperor must have a pretty hefty budget for guys like me to invent stuff.

Maybe they could have consulted with Brian Coleman, who wrote an article for the October/November magazine “Old-House Interiors” about bee motifs used in decorating old and replicated heritage houses. He came up with quite a few cool ones, including a hand-painted beehive in a leaded-glass window, a replicated bee-on-silk pillow fabric inspired by a 19th century French design, and a bee-and-flower door latch in Brigham Young's Utah home “Beehive House.”

Coleman's brief article has some nice photographs, and in the text he describes what bees symbolized to the handymen and craftsmen of olden days that inspired them to decorate their work with bees. Industry and vigilance, of course, but also purity. Bees were thought to be chaste, and for that reason were associated with the Virgin Mary.

Others considered bees thrifty because they saved up their honey, and so bee motifs can be found scattered in banks and lending institutions. Perhaps that banking connection inspired the wealthy French royalty, since Coleman points out that bees were a common decorative motif in upper-crust French society.

But for those of you less wealthy, proletariat, working-class, union kind of guys, do not despair. Bees also were the symbol of mill workers in 19th century Manchester, England, considered to be symbolic of hard work and communal fraternity.

I guess you gotta marvel at how bees continue to inspire those handy with a hammer, saw, chisel, and sewing needle to stick bee motifs on to their handiwork. For me, I'm ordering a set of shower curtains and bath towels from Restoration Hardware.

Here in British Columbia, where it rains pretty much every other minute, I can relate to bee-keeping in the shower. And who knows, perhaps somewhere in the deep recesses of Restoration Hardware is that grizzled old handyman who can tell me just what screws to use when I proudly assemble and mount my new shower rod.

You do use screws for that sort of thing, right? **BC**

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



QUALITY WOODENWARE
Compare & Save!

Our saw cuts = Your price cuts
A family business committed to quality and efficiency

Try our new SCREENED BOTTOM BOARDS
for improved mite control and analysis!

Also available:

- Telescoping Lids ..\$7.76
- Deeps\$6.33
- Bottom Boards\$4.72
- Feeders, Supers, Inner covers
- Budget grade at 25% off our low prices
- Assembly and painting at additional cost

• 10 frame
• White pine
• Any quantity
• No Sunday calls

Questions? Call today!

Databases and Beekeeping

Malcolm T. Sanford



"What is a database?"

What is a database? It is nothing more than a collection of information or "data" that can be found at a certain place. The first database in any organism is probably a nerve cell or neuron; a collection of them is a ganglion, and a very large ganglion is a brain. It is the place organisms use when they need information collected and interpreted by specialized organs such as eyes, noses or antennae. Although little has historically been known about how the human brain gathers and stores information, the advent of the digital computer revolution is rapidly changing that situation. Witness projects like the University of California/San Diego Human Brain project.¹ The brain is also the first place beekeepers go to get information about management. The amount of information stored in beekeepers' brains is tremendous, but not everything belongs nor can be processed there.

With the advent of paper, there appeared a more permanent place to collect and store data besides the brain, which is notoriously unreliable (it shuts down on death and information is lost). An article in the February 2004 *Bee Culture* by Barbara Blaufuss discusses this use: "In the beginning I started a notebook. On one page for each hive I wrote details about the locations and the queens. It was a satisfying ritual to record in it occasionally. But I never read it. What I really needed was a way to record what was happening with my hives simply and graphically so I could see at a glance not just one hive but all the hives and locations. I wanted to paint a picture on paper of what was happening in the field." Her ledger was born.

Ms. Blaufuss concludes: "A really obvious reason for keeping some records is responsible handling of chemicals. I may not always remember when I put the strips in or how many times I have sprinkled terramycin or how much Fumidil I have given a hive. Since the timing varies with each of these treatments, it can be challenging for me to remember the details with even one hive." The same reasoning prompted Mr. Glenn Engel to think about collecting information on bee colonies: "The original idea for this came from my inability

to remember exactly when to remove my mite treatments."

Rather than paper, Mr. Engel moved to a newer technology to manage his database, the digital computer. After doing some searching, he saw no beekeeping applications available on the World Wide Web to do this task, and so he took on the daunting challenge to put something online, available to all beekeepers around the world at any time. This became his web site with the domain name: mybeehives.com.² Fortunately, Mr. Engel has a background in programming sites like these. He is currently building a 72-foot tower with its own web page that controls the height of the tower, as well as the direction of the antenna at the top of the tower.

About his beekeeping database project, Mr. Engel says, "I bought the domain name this last summer and the idea incubated until November when I started writing some database and web scripts to get the site up and running. On Dec 2, 2003 I made the site active and after one or two emails to beekeeping lists the users (and hives) started showing up. So far I haven't really tried to advertise as the site underwent significant changes in December but I think it's now ready for general use. I think this morning I told you there were 65 users and 156 hives. Tonight there are 71 users and 165 hives so use is growing.

"My main goal for the site is for it to be useful to beekeepers for their records so over time I'll be enhancing it with various reports and analysis pages including the ability to send an email reminder to remove miticide six weeks after it goes in. When users register I ask for their postal code with the future objective of being able to generate reports showing interesting things like average yield per hive per state. I've leveraged many ideas from a paper written by the WA State apiarist. (Note: WA no longer has an official state apiarist due to budget cutbacks, but Jim Bach is still working for the dept of agriculture in WA).

"I've also tried to capture data in a way that allows for subsequent analysis by someone (perhaps a gradu-

1. <http://neuroscience.ucdavis.edu/hbp/>, accessed January 22, 2004.

2. <http://mybeehives.com>, accessed January 22, 2004.

ate student) if the amount of data in the database becomes statistically significant. For example, the checkboxes allow users to make notes about their hives in a way that allows analysis tools to look for correlation. Another example of interesting questions are what is the distribution of queen races by geography; do hives that have an entry for 'supercedure cells' subsequently swarm; which queen breeders have queens that don't tend to swarm; what is an average honey crop, etc. In any case, users' true identity will never be revealed or released but the 'raw' data could prove interesting. Finally, I do not have any plans to start charging users or add annoying pop-up ads but want to keep it a free and useful resource for beekeepers."

When first seeing Mr Engle's site, one immediately notices the possibilities. Each colony can be seen at a glance. Information includes hive color condition of queen and brood, diseases and treatments used, and other notes. Colonies can also be summarized. The site also includes reference materials and a forum to ask questions and share information with others. Finally, there is no current limit on number of colonies or users. A most exciting possibility is that many beekeepers across the nation could use the database to collect data on a uniform basis for large-scale studies. Investigators would have at their disposal a huge amount of information to look at and share with colleagues.

Although perhaps the most innovative database in terms of sharing information, most web pages are in fact databases. Two others that come to mind are beesource.com and the French mega site apiservices.com, both of which I reviewed in previous articles in this magazine.³

3. <http://www.beeculture.com/beeculture/digital/>, accessed January 23, 2004.

There are databases available in other areas that concern beekeepers. Perhaps most important are those of the plants honey bees forage on. Enter Dr Zachary Huang at Michigan State University in cooperation with his colleague Dr George Ayers, who is a recognized authority on bee plants. Their database is just beginning its development, but still shows some great possibilities such as searching for plants based on common name, Latin name, country of origin or even bloom time.⁴ The main page, for example, has a link to two of my favorite plants. The first we call here in Florida, swamp maple. I look for it each year about this time. It is a signal that Spring has sprung and beekeeping season is underway. The second is tulip poplar, the reliable source of a dark reddish honey in the southeast, but a plant that is distributed throughout the United States. There is a lot of information on both species on the site, and striking pictures can be printed in various formats. Finally, there are comments from beekeepers about the plant, most notably those of South Carolina's David Green, who has his own database web site devoted to pollination.⁵

Other plant databases exist that are phenomenal, but not necessarily dedicated to beekeeping. For sheer quantity of information, the National Plants database maintained by the U.S. Department of Agriculture can't be beat.⁶ There are a raft of others listed at the about.com site.⁷ **BC**

Dr. Sanford is a former Extension Specialist in apiculture at the University of Florida. He publishes the APIS newsletter, <http://apis.shorturl.com>

4. <http://plants.bees.net/>, accessed January 23, 2004.

5. <http://pollinator.com>, accessed January 22, 2004.

6. <http://plants.usda.gov/>, accessed January 23, 2004

7. <http://biology.about.com/cs/plantdatabases/>, accessed January 23, 2004.

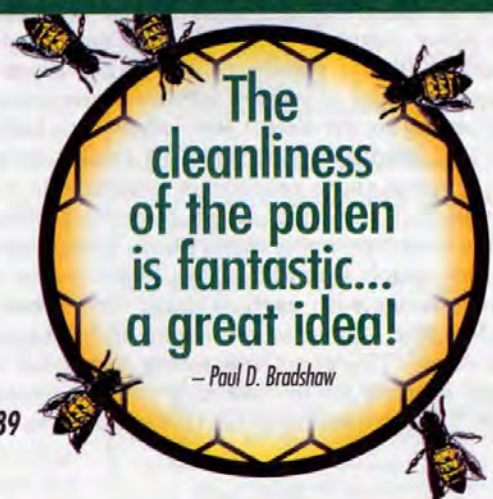
The Sundance™ bottom mount pollen trap is clearly superior!

Some of our features include a cover to prevent hive debris from entering into pollen drawer, stainless steel screen on drawer, heavy duty galvanized wire cloth, rear opening drawer, drone escapes to allow for easy exits without going through stripping screen and a simple switch for collection or non-collection.



**ROSS
ROUNDS™**

To purchase, contact your dealer.
For more information call toll-free: 877.901.4989
www.rossrounds.com



When Your New Queen Fails Your

EXPECTATIONS

A whole variety of things can cause your new queen to fail.

Larry Connor

When Problems Arise

Last month I discussed some of the factors of stress and injury, queen size, and the fact that perfection is a relative concept – perfection in the eye of the individual beekeeper, that is. There are many situations during which a queen may be injured, stressed, or lost. Small queens are rarely perfect.

This time let's examine some other factors that interfere with a queen's 'perfection.' Some items have been mentioned in earlier articles, but they bear repeating within this context. Let's discuss natural queen replacement biology (supersedure), and examine factors that impact queen replacement in healthy and not-so healthy colonies.

Supersedure – The biology of queen replacement

Bees live in a stimulus-response world. If something is out of balance, they take action to correct the disparity. Queens are replaced when they are out of balance with their colony, primarily due to a failure in their production of queen substance. This is not a single chemical, but a complex bouquet of chemical pheromones that apparently provide the bees with the biochemical feedback that the queen is in the colony and doing her job. More importantly the queen's pheromones regulate queen cell production and suppress worker-bee egg laying; two factors essential for proper colony balance.

A common pattern produced by a drone laying queen.



A queen receives the raw ingredients for queen substance from royal jelly, fed to her by young worker nurse bees. These worker bees feed on both stored and incoming pollen and honey to secrete the royal jelly in the glands in their head and thorax.

Worker bees have contact with the queen, sometimes shown as a circle of worker bees surrounding the queen. In real life individual worker bees make contact with the queen through feeding and antenna contact and by grooming her body. These worker bees are 'hot' and move about the colony sharing the queen substance with other workers. A large number of worker bees thus make indirect contact with the queen on a more-or-less continuous basis.

If anything interferes with this cycle (pollen→royal jelly→queen substance (pheromone)→worker bee detection of queen substance), then queen replacement is the likely outcome. This is initially expressed by the selection of correct aged worker larvae which are fed differently than other workers and whose worker cell is reshaped as a queen cell.

If a queen produces too little queen substance, it may be due to her natural aging process, or exposure to disease, or exposure to a pesticide, or due to the fact that she has not been fed enough royal jelly by the workers. Thus, if the workers are under the influence of pesticides inside the colony or there is a complete lack of pollen, they will not be able to feed the queen the royal jelly. Or, if the worker bees are weakened because of high mite levels or noseema, their royal jelly production may drop and the queen will be superseded.

In healthy colonies, queen cell production is initiated with a dilution of the queen substance during the swarming condition. Then, large worker populations and abundant incoming and stored pollen and nectar, result in queen cells being produced because the worker bees are not getting enough of the queen pheromone back to them, and the inhibitive effect is lacking. That is why it is difficult to reduce the swarming impulse unless the population of the colony is reduced.

Also, accidental death of a queen or removal (by the beekeeper) stops the queen substance suppression of queen cell production, and emergency queen cells appear in the colony.

Drone layers

There are two conditions under which queens lay drone eggs in worker cells. First, an unmated virgin

“The clumsy beekeeper syndrome is probably one of the leading causes of queen failure.”

queen may start laying eggs because she was unable to take a mating flight or there was a lack of drones during flights she did take, and has not been able to find viable drones with which to mate. The second is the condition where a queen exhausts her supply of sperm in her storage container, the spermatheca, and unfertilized eggs are produced; drones result.

Egg-laying virgins Unmated virgins result whenever a queen is unable to mate during the normal mating ‘window’ in her development. Virgins stored in queen banks that are very well fed will start producing eggs after several weeks; the eggs will be deposited on the bottom of the cells. After a period of several weeks, such queens will begin to lay unfertilized drone eggs in worker cells.

In nature, laying virgin queens develop most often as Winter approaches, and a new queen is produced in a colony due to the death or removal of the queen. [Northern queen producers use this method in order to obtain early Spring drones. Desirable colonies are de-queened late in the Fall after all chance of mating is over, but while there is still brood present for queen cell production. Or a queen excluder may be placed on the bottom or entrance of the colony to prevent mating. Either way, by Spring, the colony will contain a mixture of old worker bees and drones produced during the Winter brood cycle. Most of these drones will be worker-sized. Such colonies will not survive long in the Spring, but will – in theory – provide an early flood of drones for early-Spring mating.]

Sperm depletion This occurs when queens that successfully mated with drones have run out of sperm. As queens lay eggs, the egg passes through the median oviduct and a volume of the contents of the spermatheca is released. Young, newly mated queens may release a volume with a large concentration of spermatozoa, say 50 or more. As the queen lays more and more eggs, the concentration of sperm in the spermatheca is reduced, so that a queen that has oviposited hundreds of thousands of eggs may be releasing one or two spermatozoa as the egg passes down the median oviduct. Note that the volume of the spermatheca is constantly replaced – remains constant – because fluids are being replaced.

This may be compared to a pot of rich soup which has a cup of water added every time some removes a cup of the soup. At first, everything is fine, but after many visits to the soup pot, the remaining ‘soup’ is thin and watery.

Several factors potentially impact on this condition:

Age of the queen: This is the most common scenario; as older queens release the sperm in their spermatheca, the concentration of sperm is reduced. In fact, reports of queens that live four or more years should be challenged because of the mechanics of sperm depletion in a vigorous laying queen. This development should be somewhat gradual; since the number of eggs affects the rate of depletion.

Size of the queen: Last month I wrote that size in queens is important. So I repeat: *Size is important.* Among other factors, a larger queen has a larger spermatheca than a small queen. She will retain more sperm at mating and she will produce more eggs for a

longer time period. Even a 10% increase in the diameter of the spermatheca will result in a much larger number of stored sperm. Here is an exercise to help you understand this point. If you have a round balloon which you fill with water so that it is 10 inches in diameter, how much more water will the balloon hold if you fill it so that it is 11 inches in diameter

Faulty drones: Drones are highly susceptible to the environmental and colony conditions present during development. If drones are reared in marginal conditions – especially cold weather with a minimum of pollen forage – the likelihood of reduced sperm loads increases. Such drones will mate with a virgin and the queen will start out appearing quite normal in her brood pattern. However, once the concentration of sperm in the spermatheca is reduced, she will mirror the behavior of an old queen running out of sperm.

It is my experience that queens generate an increased number of drones at two periods during their development. First, immediately after she is introduced into a colony or has completed her normal, healthy queen replacement behavior – there will be a spurt of drone-egg-laying by this new queen. Perhaps this serves as the genetic equivalent of flooding the market with new drones carrying the new queen’s genetic information. Second, several weeks before a queen supersedes naturally, she will have an increase in drone production. This may be associated with a reduction in her



Examining the midgut is a good field test for Nosema.

production of worker brood, but she will continue to produce both. While we know that virgin queens tend not to mate with brothers, such a behavior would have a strong selective advantage in areas where colony densities are low.

Pesticide injury

Queen failure linked to agricultural pesticide use is indirect, since it is difficult to prove that a queen herself has been affected by a pesticide application. The obvious reason for this is the impact of agricultural pesticides on the total colony; reducing colony worker population, contaminating food supplies, and throwing the colony's balance completely off equilibrium, especially the royal jelly→queen substance feedback mechanism.

For a long time we thought that agricultural pesticides were kept 'away' from the queen because contaminated food would kill bees that had direct contact with the poison, thus sparing the queen. In fact, some pesticide losses have been characterized by the presence of a laying queen surrounded by a few cups of bees. The queen was often seen laying more eggs than the workers could prepare cells for, and there would be multiple eggs in the cells. Unlike laying workers, where the eggs are often on the sides of the cells, these eggs were laid by the queen because they were at the bottom and center of the cells.

Ultimately, however, pesticide-damaged colonies usually undergo queen loss and/or queen supersedure. Queenlessness may be the result of the break in brood rearing immediately following a pesticide exposure, and the subsequent lack of young brood for queen cell production. Also, foragers have probably completely stopped pollen collection, and the bees will be feeding on remaining eggs and young larvae.

Ultimately, the queen is superseded because the balance inside the brood nest is broken. Worker bees produce royal jelly that is fed to the queen bee. The royal jelly is the precursor of the queen substance the bees monitor to biologically 'know' the queen is present in the hive. Lacking royal jelly, the queen fails to produce queen substance, and the bees go about the process of replacing the 'missing' queen.

Lacking suitable young larvae and queen substance, the colony becomes queenless and eventually dies.

Internal Pesticide Use It is very clear that beekeepers using miticides inside their colonies at rates higher than the recommended dose have suffered queen damage and queen supersedure. Unauthorized homemade mite control methods have perhaps killed mites, but injured queens too.

(Further, there is evidence that some registered miticides, even when used correctly, affect sperm production in drones, and the ultimate size of exposed queens. Both of these situations, as explained above, can affect queen performance and lead to supersedure. Ed.)

Diseases

Nosema is a disease of the mid-gut of the adult honey bee worker. It may also be present in the mid-gut of the queen. It is often called a quiet killer of colonies, and is still under-valued – in my humble opinion – as a *major* source of queen supersedure. *Nosema interferes with a bee's ability to digest pollen and honey and produce brood food and royal jelly.* Thus, it directly conflicts with the pollen→royal jelly feed back mechanism we have been discussing.

Package bees are noteworthy for their susceptibility to nosema. This may be due to their lack of brood in all stages, and other 'balancing' aspects of the hive's equilibrium. Colonies that produce bees and queens for package bee sales must be treated for nosema control or the likelihood of premature supersedure of the new queens increases. Further, worker bees that have been treated properly will live longer, providing better stability for the growing colony after introduction.

All beekeepers should learn to pull out the mid-gut of a bee and look for evidence of abnormal swelling. If present, it suggests nosema, and the colony should be treated. Until you learn to check the bees yourself, find a bee inspector who will do a quick check to see if further testing is advisable.

Sexually Transmitted Diseases (STDs): It has been shown that older drones may infect queens during mating with bacteria or fungus spores, leading to her ultimate failure. I have no data to suggest this is a common event.

Clumsy Beekeeper Syndrome (CBS) & Other Disasters

I will close by giving you my own list speculating on other ways beekeepers and others might reduce a queen's production of adequate levels of queen substance (queen pheromone):

A. Shipping and Handling

Overheating: Along with dehydration, overheating may cause permanent damage to the queen's ability to produce queen substance.

Chilling: Periods of prolonged chilling will slow a queen's metabolism and may result in permanent damage, if not death.

Exposure to chemicals: Who knows what chemicals queens and package bees are shipped with in transit. RAID at the post office for a few hitchhiking bees on packages?

Dehydration: Extremely long periods of very dry conditions may dry delicate tissues in the queen's body. Make sure all attendant bees are alive and well when you obtain queens, and check softness of queen candy. If the candy is very hard and the attendant bees are dead, I would suspect dehydration or delayed delivery. Install such a queen into a smaller colony, like a nucleus, and watch her behavior (fate) carefully.

Delays: This is much like dehydration; it just takes longer...

B. Beekeeper mis-handling

Delayed introduction reduces size of queen: New queens should be put into a colony under a safe introduction method as soon as possible. When queens

arrive, it is not time to go fishing. Beekeeper, you have things to do right now, regardless of the weather!

Damage in queen holding colony: Well, here the beekeeper made up a queen holding colony but did it wrong. Maybe there is an unknown queen running loose in the holder, or there are no young bees present (from frames of emerging brood) to feed the queen adequately. Or, maybe, there is no pollen and nectar (sugar syrup) with the same result.

Damage while being clipped/marked: Ever search for the queen under the car seat? Or behind the washing machine? I have. I wonder how many queens are damaged while removing the worker bees in the cage before introduction, or while clipping and marking or handling the queens in the process. Or grabbed on the fly as she tries to make an exit out the window?

Too-fast introduction into a colony: If you believe that you can safely introduce a queen by dropping her into honey and throwing her into a colony, I wish you lots of luck.

C. Biological issues

A queen introduced with another queen present: Between ten and 20 percent of all colonies have more than one queen present in the spring. Keep looking for the queens (note plural).

Colony 'too strong' for new queen: Full-sized colonies often present their own set of difficulties. Try introducing the queen into a nucleus and *then* merge the nucleus with the colony to be requeened. For some reason, this always seems to be the meanest colony in the apiary.

Drastic change in genetic makeup of queen compared to bees: Bees are able to detect similar genetic

bloodlines and will give the 'less related' queen a more difficult time. Use related stock, or requeen using nucleus colonies. This has been common recently when introducing pure or hybrid Russian queens into colonies with predominantly Italian stock workers.

Colony in a dearth and/or robbing conditions: I don't like to use human terms to describe what is going on in a colony, but think of this as Old Mother Hubbard: the cupboard is empty and there is a new mouth to feed. A little thin syrup *before and during introduction* will change the reception and acceptance of a new queen. Actually, this practice will assist introduction success *EVERY TIME* you introduce a new queen.

Disease: We discussed this above.

High mite levels: *Varroa* mites feed on bee blood and reduce bees' ability to produce food and royal jelly.

Exposure to contaminated combs: Chemically 'hot' combs from years of treatment with miticides and who knows what. Rotate combs out of your colonies every three years or so. Stored pollen contaminated with agricultural chemicals will not support newly installed queens either

What else?

What have you experienced with queen problems? Send me an email (LJConnor@aol.com) and let me know, and I may be able to include it in a future column. Better yet, let me know what works well for you; what methods do you use to insure proper queen survival? **EC**

Dr. Lawrence (Larry) Connor is owner of Wicwas Press, New Haven, CT where he edits and publishes books on bees and beekeeping - LJConnor@aol.com or website www.wicwas.com.

Kills *Varroa* Mites All Over The World

API LIFE VAR[®]

BRUSHY MOUNTAIN BEE FARM, Inc.
610 Bethany Church Rd.
Moravian Falls, NC 28654

800.233.7929
www.beeequipment.com

NEW TECH COMB HONEY

Maribeth Fitts

Packaging and selling cut comb honey can be a tedious, labour-intensive, messy job. Now, thanks to an invention from Bee-O-Sphere Technologies, the process has been made clean, affordable and convenient.

Bee-O-Sphere Technologies designers, Andrew Sperlich and Ian Bigham, have spent the past three years, with the assistance of federal government funding from the Canadian Industrial Research Assistance Program (IRAP), studying bee behaviour and developing a revolutionary new packaging product for comb honey production called the Bee-O-Pac.

Traditionally, beekeepers have cut comb honey out of frames by hand, draining off the honey from cut cells, and repackaging the comb into boxes for retail sales. It is a slow, messy business, with finished combs sliding around in the packages because they are never an exact fit. Newer section systems of producing and packaging comb honey

are easier than that, but require higher initial investment or do not fit into standard frames.

The Bee-O-Pac comb system is unique in that it is vacuum-formed from virgin food-grade PET plastic using an automatic inline forming machine. It consists of eight two-piece easily-assembled frames which are inserted directly into a standard Langstroth super without any modification. The frames have eight cavities on each side and each cavity is embossed on the bottom surface with a starter foundation. Wax foundations are not needed for the bees to create the comb. Bigham says the grade and surface quality of the plastic is acceptable to the bees to begin to build comb cells directly on the units.

At harvest time the frames separate into eight marketable units along preformed perforations, a lid is snapped on, a label is affixed, and the combs can be sold immediately without modification or repackaging. This means less chance of damage because there is minimal handling of the product required.

An important feature of the Bee-O-Pac is that the size of the individual units is much smaller than available comb packaging, based on the results of a market study which showed that most comb packages were too large for the average small household. The Bee-O-Pac holds about four ounces of comb (130 to 140 grams) as opposed to traditional packs of eight or twelve ounces, making the product much more consumer-friendly. The amount of wax is greatly reduced in

the new comb packs as well, due to the elimination of the wax foundation. The dimensions of each packaged unit are about 3" wide, 4½" long and ¾" thick.

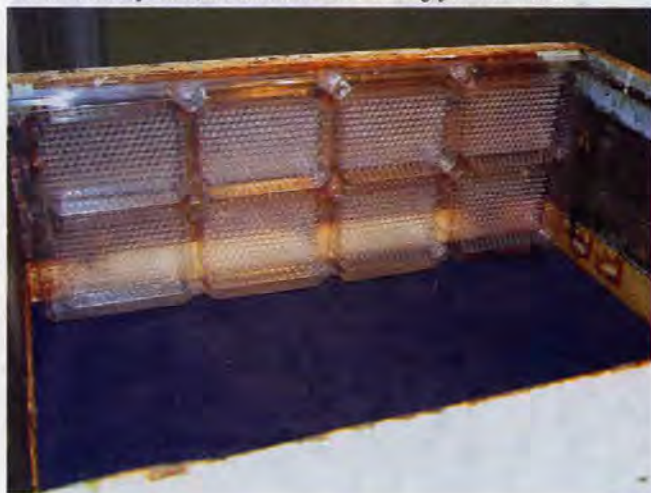
Sperlich says that the Bee-O-Pac units are more affordable and less time consuming than the other commercial units available. "I used to avoid making comb honey like the plague," says Sperlich, because it was so labour intensive. He estimates that the Bee-O-Pac units save at least three steps compared with traditional methods of packaging comb honey. Bigham has calculated a labour savings of more than 75% over the traditional methods.

The lower total costs of the Bee-O-Pac system also makes it more feasible to wholesale comb honey which, for many is virtually impossible with former methods. The packaged units can easily be stacked at least six high, enabling crating and shipping of larger orders.

Sperlich says that the opportunity exists to market combs as an untouched product with the concept that it is "exactly the way it comes from the bees." Bee-O-Pac combs can be produced and sold with unifloral characteristics, depending on foraging sources, such as blueberry honey, because the product is sold "as is."

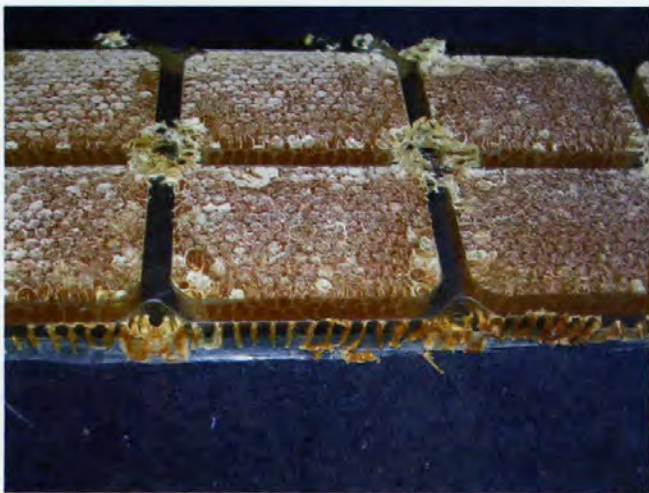
Test sales of the Bee-O-Pac comb products to customers at local farmers' markets and to retailers have been very positive. Bee-O-Sphere is planning to market this patent-pending technology worldwide and also to increase the sales and interest in comb honey produc-

A Bee-O-Pac frame, assembled and ready for the bees.

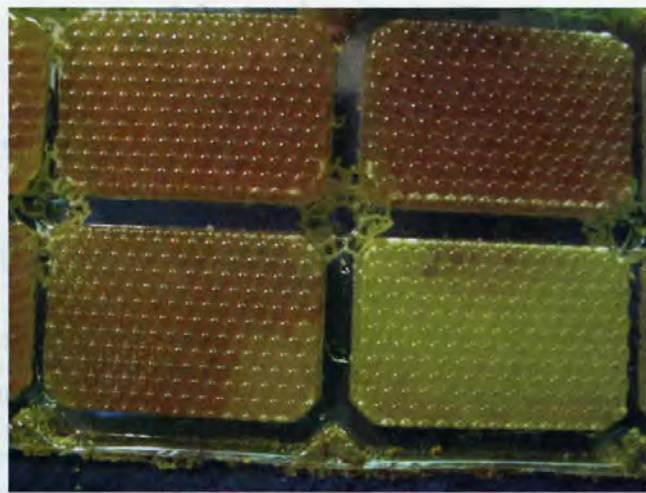


Filled frames, ready to harvest.





A filled frame, showing the exposed side, the cover not on.



A filled frame, showing the back of the container.

Customer ready pack, with cover on.



tion. Sperlich says that there has been a supply deficit of comb honey for a long time now, but hopes that this affordable packaging will revive the industry and supply demand.

The impetus for the new product started about three years ago when beekeeper Sperlich and design engineer Bigham got together to come up with a simpler method of creating comb honey. Looking for an alternative to wood, the first year

they tried out a number of different plastic prototypes in hive frames. By their second season, they had an improved plastic unit which was more extensively tested at five locations across Ontario. In particular, units tested in hives at the University of Guelph worked perfectly, says Sperlich. He says that the key to the success of the units has been the pre-embossed foundations and the fact that they eas-

ily fit into most standard hive supers. "Our mission was to make a comb honey product that was easier to use, consumer friendly and profitable for the beekeeper," says Sperlich. **BC**

For more information contact Bee-O-Sphere at 519-586-3938 or 519-586-8289, or on the website, www.beeosphere.com.

Propolis Traps

Reusable molded plastic



www.propolistrap.com
Phone: (586) 752-9850
Fax: (586) 752-1809

Candles
Salves
Cards
Soap
Balms
Licensing

Call 1.877.382.4618
www.redbeestudio.com



Plastics Packaging Concept

Sale & Distribution of
Angel Bottles

P.O. Box 617
Garden City,
MO 64747
816.862.8703 or
FAX 816.862.8702
GCPJKM@aol.com

ORGANIC BEEKEEPING

Gunther Hauk

When we raise the issue of organic beekeeping, we are primarily interested in the question about organic honey standards: how pure can it be with all the environmental pollution, with the pesticides, insecticides and miticides applied not only in conventional agriculture, by the average home owner, and also by the beekeeper? The environmental damages, including the greatly reduced wild flower nectar and pollen supply, the acid rain, the monocultures with their host of chemical applications certainly pose a serious threat to our insect population, including the honey bee.

But the question about organic beekeeping practices starts with us beekeepers. How much do we know about the bee colony as an organism, about its organs and their intrinsic needs which alone guarantee their health and vitality? How much of their instinct – this cosmos of wisdom maintaining and guarding their life and well-being – is being ignored or neglected, not taken seriously, just because they can adapt to our own needs and desires to a certain degree and for a certain period of time?

"Have we bred our bees for only high level output, and manipulated their basic instincts for our own comfort and monetary gain?"

We can take a look around and notice that there is a crisis with all our domesticated animals, not only with the honey bee. How many beekeepers know that just 80 years ago the life span of a cow ranged between 15 and 25 years? On our commercial dairy factories – I hesitate to call them farms – the latest statistics show the life expectancy of cows being pushed to an enormous output of milk has dropped radically: down to 0.9 calves or approximately three years. The reproductive fertility is also on a drastic decline. The chicken's instinct to hatch their own eggs has been bred out of them. The pigs need a constant supply of antibiotics and tranquilizers for their survival.

Most of these animals, whether bovines, turkeys, chickens or pigs need these tremendous amounts of antibiotics, hormones, tranquilizers to hide the fact that they are very sick. What has brought them into this pitiful state? I would venture to say that it is our

ignoring their basic needs for the sake of monetary gain. The bovine, for example, is a ruminant whose health depends on feeding on a relatively low protein/high cellulose forage. For the sake of high milk quantity, quick 'production' of meat we feed them such high levels of protein that their organism can't cope with it, causing sickness and death.

Is it any different with our honey bees? Can they, on the whole, survive without regular doses of miticides to keep tracheal and *Varroa* mites in check and antibiotics to keep foulbrood under control? Have we bred them for high level 'output,' manipulated their basic instincts for the sake of our comfort and monetary gain?

If the annual losses of colonies alone are not frightening enough, then the reports of increasingly higher rates of queen failures should wake us up.

There is no doubt: we are in a crisis! Hiding or minimizing this fact will not get us any further. This does not only concern us here in the United States, but is a global problem. The 2002/3 Winter losses of bee colonies in Germany reached an estimated 60% nationwide.

A crisis fortunately is never exclusively a problem, but always an opportunity to make the changes needed to reverse the trend. We know from extensive documentation, that an illness can be a blessing in disguise when viewed holistically and treated with an attempt to deal with the causes, not only to get rid of the symptoms.

In such a vein I see the attacks of the mites, the hive beetle, the foulbrood bacterium, the increase in failing queens, the lack of inherent vitality and resistance to these attacks. They are wakeup calls that we should not ignore.

What can we do about these problems? First of all, we must take an honest look at the possible causes and find out how we can change the situation.

Certainly there are no quick fixes, no silver bullets.

In my 30 years of beekeeping, one approach has always helped me in trying to evaluate whether a beekeeping method – whether handed down by beekeepers steeped in older tradition or an outgrowth of new scientific research – would benefit the colony. I would compare the method with the natural instinct of the colony. What would the bees really want to do if left alone. I must admit that I have extremely high regard for the instinct of an animal. It is their wisdom which has guaranteed their survival, even their evolution, for millennia. I take this inherent knowledge they possess to be vitally important and respect it as much as possible.

Thus I look at their housing: does it not only insulate but can it still breathe, has it come out of a life process in nature, as wood has, or is it synthetic?

What does the act of swarming really mean? What will happen when I thwart this basic and wonderful act of procreation and multiplying? I know from myself that there is a difference between my own free decision to renounce an instinctual drive and my being forced into such an act. Any psychologist will tell you that chronic frustration ensues illness and weakness.

Or take the amiable, gentle drones! Wouldn't one suspect that there is a deep reason for a colony to

produce just that number of drones, a reason that probably goes beyond our limited faculty of perception and cognition?

Why do we think that we can manipulate the drone population without ensuing consequences?

Our whole way of raising queens, keeping and feeding the colony, the timing of making splits, working with or against the swarm instinct: these are all questions that we must look at with a fresh eye unobstructed by theory and dogma.

I am convinced that when we can come to methods that again honor the organism of the colony, its wisdom and its needs, we can raise its innate health and vitality again.

Unfortunately, we tend to lay our hopes into and wait for miraculous solutions which will solve our problems, silver bullets soon to be discovered, bullets that will do away with the mites, with hive beetles, with foulbrood and nosema. But these weapons will not be confronting the causes, will only work to get rid of the symptoms and thus will not create vitality and health. The results will inevitably be that our bees will become ever weaker and even more susceptible to parasites and diseases.

I am aware that this is a drastic viewpoint. But have we forgotten that healing occurs when we can work and live out of our innermost impulses, when our physical, our psychological and spiritual needs are met? And let us also not forget that our bees are animals, living beings that react to our motives, to our deep

"I am convinced that when we can come to methods that again honor the organism of the colony, its wisdom and its needs, we can raise its innate health and vitality again."

respect for their own needs or our lack of it.

Does the honey bee's productivity remain our foremost goal? In spite of all the problems, "How much honey did you get last year?" still seems to be a most popular question! I am convinced that this is the right time to reconsider our aims and methods. We cannot wait! **BC**

Gunther Hauk is the Program Director, The Pfeiffer Center. On March 5-7 2004 the second international organic beekeeping conference takes place here with Thomas Radetzki from Germany and Medhat Nasr from Canada. An organic beekeeping workshop will be April 30-May 1 For more information call 845-352-5020, Ext. 20, e-mail: info@pfeiffercenter.org

HONEY



X101
\$12.95

A National Best Seller About Healthy Honey

To order call
Root Publishing
800.289.7668
postpaid in the U.S.

Let us BLOW you away!!

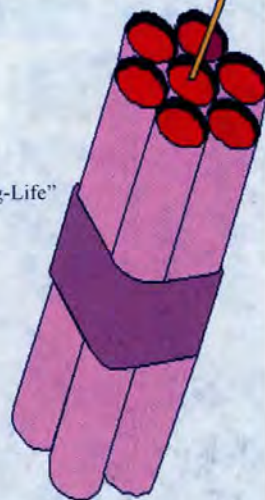
With QUALITY Italian Queens, Package bees and Cypress woodenware from ROSSMAN APIARIES!

	Queens:	Packages:
1-9	\$13.00	\$48.00
10-24	\$11.50	\$46.00
25-99	\$10.50	\$44.00
100+	\$9.50	\$41.00

Call for a copy of our catalog containing our full line of "Long-Life" Cypress woodenware and beekeeping supplies!



PO Box 909-Moultrie, GA 31776
Open M-F
8a-5p ET
Closed Noon-1p
800-333-7677 Orderline
229-985-0209 Fax



KIDS 'N BEEES

Ten activities and a 100 topics!

Kim Lehman

This is the second part to organizing and implementing events for the public, a four part series on presenting programs for children. Part three will concentrate on presentations with groups of children in a classroom setting. Part four will share ideas, resources and ways to add pizzazz to programs.

You have done the preliminary work on organizing your event. So far you have a location. You sent event information to different groups. You contacted the media. You have volunteers lined up. Now to plan for the actual program activities.

Choosing Activities

Knowing your audience and your environment will determine what activities to choose. When dealing with public events there is no way to know who will come and how many there will be. I find when organizing an independent bee event the average ages are from four to 10 years old. If the event is part of a bigger venue like a state fair or annual community affair older elementary aged kids, teenagers and adults may be the largest portion of your audience.

The amount of space you have available and the number of volunteers will also dictate what kind of projects to do and how many you choose.

ACTIVITY LIST

The following activities are not just for bee events. They could be used with children, grandchildren and neighborhood kids. You may want to incorporate them with a school visit or part of a fair exhibit.

Often the public feels they do not know enough about bees to ask questions. Included with each of the following activities are topics of discussion to stimulate interaction with the children and their families. If you break the ice and begin the dialog you can ignite their curiosity. Then the learning will begin and questions will follow.

Observation Hive

This is always a winner! The bees themselves stimulate interest, inspire questions and provide the ability to stop a wanderer. Topics to discuss: colony behavior; the different jobs in the hive; bee dances and communications; the difference between the queen, workers and drones; and bees as social insects. Ask children if they know of other social insects.

Products of the Hive

Place wax, pollen, propolis, and honey for children to see, touch, smell. Provide a magnifying glass or

Hannah Nelson, the 2003 Missouri Honey Queen, paints a bee on a happy face. (photo by Ron Bishop)



Mark Roberts, a gifted science teacher, brought microscopes and dissecting scopes for children to get up close and personal with honey bees. (photo by Ron Bishop)



magnifying boxes for children to get a closer look. Have hand cream made from beeswax and honey for children to try. You can have other products available like toothpaste made with propolis, cereal made with honey, crayons made with beeswax, or cosmetics made with wax or honey. This activity offers many learning opportunities. Topics to discuss: what is pollen, propolis, wax and honey; how are they made; and what are their benefits for the bees as well as humans.

Rolling Candles

You will need beeswax sheets, wick, scissors and a knife or pizza cutter wheel to cut the wax. You can cut the sheets in fourths for the children to make a short candle or cut in half in a diagonal for a fancier candle. Depending on the event and the audience you can charge people to make candles, solicit for donated wax, or find a sponsor willing to purchase your supplies. In Ohio last summer at an event sponsored by a university, the state beekeepers charged \$1 to make a candle at their tent. At another program, the library paid for the materials for the children to participate free of charge. Topics to discuss: how bees make the wax; how bees use the wax; how the hexagon structure is architecturally strong and is an efficient use of space; the fact that bees make the wax but the foundation is man made; and describe other candle making methods.

Microscopes and Dissecting Scopes

This is a favorite. There is something extra special about seeing a magnified wing or stinger. How do you acquire microscopes? You can ask a high school science teacher, local university, or science museum. If you are organizing a program in cooperation with a beekeeping conference sometimes entomologists attending will be able and willing to bring some scopes. Another consideration is to purchase your own scopes. Don't forget to bring dead bees, slides and tweezers to use. To order a very simple micro-slide viewer contact National Teaching Aids at 1-800 289-9299. These fairly primitive viewers do not require electricity and are inexpensive. One tip to using these magnifiers is to tape the slide in the viewer. That way everyone will be able to see the bee body parts without repositioning the slide every time someone wants to use it. Topics to discuss: parts of the bee and how they work including antennae, compound eyes, wings, pollen brush, pollen basket, proboscis and stinger.

Pollination Power

I find this to be one of the more important concepts yet one of the most challenging areas to come up with hands-on activities. One idea is to cut apples in half, horizontally through the center, to reveal a star. If an apple is fully pollinated it should have ten developed seeds, two in each "pocket."

The convincer is if you can find an under pollinated apple, with an unfilled side, fewer seeds and reduced size. The effect is striking and memorable for children.

Another activity is to have pretend bees on sticks that children can use to pollinate flowers on the table. To illustrate the way pollen "sticks" to the bee, place a shallow container of sugar (pretend pollen) on the table.



Chris Gibbons gets kids excited about beekeeping at a children's program in conjunction with the Missouri State Beekeeping Convention.

Educational photos are always entertaining and work well for kids.
(photo by Ron Bishop)



Have children dip a paintbrush into the sugar and see what happens. Of course some of the sugar sticks to the hair of the brush illustrating how the hair of the bee aids in pollination. Display foods dependent on honey bee pollination. Another idea is to weigh the children and divide their weight by three. If they were a bee that is how much pollen they would carry. Topics of discussion: what is pollination; how do bees transport pollen, how bees use pollen; honey producing plants; and foods primarily pollinated by bees.

Cooking

This activity can be a bit messy. Some locations have food restrictions so double check to make sure this activity will work in your space. There are two ways to look at this one. One way is to make batches of honey treats. This works well for scout events that have troop participation. The other way is to allow chil-

Continued on Next Page



A girl dresses up in a beesuit to try her hand at beekeeping thanks to Sarah Vilotti. (photo by Ron Bishop)

dren to make their own individual serving size. All you need are small Dixie cups, popcicle sticks and cooking supplies to make this one happen. Topics for discussion: how bees make honey; other ways to eat honey.

Honey Treats

Combine in bowl:

1/2 C. honey

1/2 C. peanut butter

1 C. dry milk

1 C. uncooked rolled oats

Mix by hand. Shape into balls.

Single serving Honey Treat.

Combine in cup:

1 tsp. peanut butter

1 tsp. honey

2 tsps. oatmeal

2 tsps. powdered milk

Stir with a stick.

Eat. Yum yum.

This recipe can be altered. Add raisins, sprouts, or nuts. The dry milk makes this treat nutritious by combining with the peanut butter to make a complementary protein.

Be a Beekeeper

Have children try on beekeeping veils, suits and gloves. Have smokers, supers, and frames available for children to use. Explain what each tool is used for. Allow the children to pretend they are beekeepers by taking out frames and examining them for pretend eggs, pollen, and honey. An added extra is to take Polaroid photos of the dressed up children for the families to keep. Topics for discussion: uses of bee equipment; reasons why you keep bees; how you got into bees; and share stories about your beekeeping experiences.

Honey Tasting

Have two to three different kinds of honey available to taste. The more varied the honey the better. That way people can visually see the difference in honey color due to the nectar source. Use small containers of honey and refill if necessary. You can use coffee stir sticks if you must, but tiny ice cream spoons are much

better. These are available at a variety of food outlets. They provide a much more professional image, and invite parents, too. Have a trashcan available for used tasters. You may need to remind children there is no double dipping! Topics for discussion: how honey is made; uses and benefits of honey; and the value of unfiltered and uncooked honey. Here are some interesting tidbits and folklore about honey. 181 substances have been identified in honey. 500 out of 900 known ancient Egyptian formulas are based on honey. Greek philosophers believed honey was distilled from stars and rainbows – an elixir of youth. After his death in 323 BC, Alexander the Great was embalmed in a coffin filled with honey...)

Bee Puppets

Here is a very easy finger puppet to make. Cut white or yellow paper in strips 1-1/2 inches wide and 2-1/2 inches long. Have children draw stripes long ways, then tape the paper to form a tube. Have tissue paper wings already cut out and place on the top of the paper tube with a dab of glue. An instant bee! I've seen children flying their little bee puppets around a room pollinating anything and everything. Topics for discussion: honey bees have two wings on each side; ask if they made a queen, worker or drone; and talk about their work in the hive.

Face Painting

Children love to have their faces painted. This fun activity adds a carnival feel to an event. It's great to see all the children running around with bees on their faces. You will need paints, paper towels, cups of water and a mirror for children to see themselves. I use water-soluble crayons. Topics of discussion: As you are painting their face you can talk about your experiences with bees or some of your favorite things about honey bees.

In Conclusion

Learning is fun! Some of the most memorable learning experiences consist of interaction and physical involvement. The activity alone is often not enough for a complete learning experience. Having someone available to talk about honey, beeswax and bee biology with children as they explore the activities adds much to the experience for both the children and their parents.

The key to insuring a fulfilling experience for the children is to interact and engage. Talk to them. Look at them. Make the initiative. Most children are shy with adults. They appreciate the fact that you are interested enough to talk directly to them. They will respond. They will remember **BC**

Kim Lehman is a hobby beekeeper. She works as a freelance children's performer and educator, and coordinates the "Kids and Bees" program at the American Beekeeping Federation Conventions. Contact information. Kim.lehman@sbcglobal.net, 512-385-3266 or P.O. Box 2743, Austin, TX 78768.



Bee Culture's Beeyard

Feeding Bees – A Necessary Part Of Good Management

For me, it's late January and I'm still feeding the nucleus colonies that I described for you in the January, 2004, issue. As described, I put the nucs in a darkened room in my bee barn and there they still sit, cold, dark, and hungry.

A number of you wrote about various feeding problems – includ-

ing feeding fondant. Though these Wintering colonies are slowly dying, I am surprised at how many are still alive. I have made some procedural observations and since feeding is potentially a procedure that can be used at nearly any time of the year, I wanted to have a go at procedures for feeding bee colonies again.

spoons. To me, as a human, it makes no sense. All of these small colonies are essentially devoid of any food supplies, so they can't be thinking that they would just Winter on what they had, can they?

I find that working with these very small, hungry colonies is somewhat like dealing with very small children – sometimes logic is completely useless. Some of these colonies almost seem eager to die.

When it comes to feeding bees, it's difficult to determine if bees are not so smart or, conversely, if they are too smart for their own good. Bees have no obvious way to transmit information concerning food that is literally in front of their bee noses. Each bee that takes syrup from a feeder must learn to do it individually. Some bees learn faster than others. Indeed, some bees will never learn to take the food efficiently, which explains why some colonies take syrup so fast while others will leave feed on so long that it will actually ferment.

A partially closed drum used for bee feeding. This is not for the faint of heart, the hobby beekeeper, or someone with bees in the backyard.



Pulling out my hair

This feeding procedure is, at times, exasperating. The temperature needs to be below 40°F at the very least. Otherwise, all these crazy bees come flying out to defend their piddling nest. I end up doing more harm than good. In a strange way, survival feeding is a procedure best implemented during cold weather

If you're starving and if there's food right here, then why did you put your cluster completely away from the food source? Yet, several colonies do this and, no, there is no brood present that would require the colony to position itself away from the food cake. It's just weird. To me as a human, it appears that some bees are simply stupid.

If you're starving and if there's food right here, then why aren't you eating it? Just as bee colonies do in warm months, some colonies eat the feed cake almost immediately while other colonies seemingly can't be force-fed the stuff with tiny

Desperate feeding

As I have said in other articles, survival feeding is a last ditch procedure. The end is probably near for the colony being fed. But there no harm in trying to help.

If there are only a few colonies to be fed, during warmer months, frames of honey can be taken from

“smart” colonies and given to the slower colonies. This is labor intensive, but it will get food in the right form to the colonies that need it. Intensive feeding, as is being described here will, on occasion, stimulate brood rearing. I’m not sure how that can be prevented. I suppose I would rather have a colony too strong going into Winter as opposed to being weak. Having them produce brood is the lesser of the potential evils.

What to feed?

Use either common table sugar or high fructose corn syrup (HFCS). Artificial sweeteners are obviously of no value and be cautious when using scrap sugar or candy.

How much to feed?

When you feed for storage rather than stimulation, feed syrup that is as thick as you can make it. HFCS syrup can be fed straight while sugar should be dissolved in hot water. Keep in mind that five pounds of sugar in 50 gallons of water is still just five pounds of sugar. The thicker the syrup, the greater the benefit to the colony. Since it requires no mixing, corn syrup is easier to feed, but it may be more difficult for the smaller beekeeper to get.

When to stop feeding?

A strong colony going into Winter will need around 15 deep frames of capped honey, but there are a lot of variables not the least of which is the climate where the colony is wintering. However, even colonies in warm climates require similar amounts of food stores – the biggest difference is that colonies in warmer climates will be able to take more cleansing flights. This will enable warm-climate bees to Winter easier on lesser quality food stores. However, taking more flights during times when absolutely no nectar is available only depletes honey stores more rapidly.

A two-story colony going into Winter should have a gross weight of (at least) 165-185 pounds – again depending on many variables. For the average person, the colony should feel so heavy as to be difficult to tilt from behind. If the colony is obviously light and can be shifted rather easily, continue to feed it.



Boardman/entrance type feeders.

What kind of feeder to use?

Through the years, beekeepers have devised an incredible number of ways to get sugar into their bees. Many of these feeders are restricted by such things as weather conditions, hive size, cost, or quantity of syrup delivered. Feeders range dramatically in complexity ranging from sugar on the top bars to gasoline-driven comb fillers.

EXTERNAL FEEDERS

Open Feeding

Open feeding is one of the simplest ways to get syrup to a large number of colonies. The problem is that the colonies being fed may not always be yours. Also, weaker colonies may have problems getting their fair share when competing with stronger colonies.

Examples of common open feeders are a 55-gallon drum cut in half or a plastic child’s wading pool. The open feeder will need either gravel or straw placed in it for the bees to stand on while feeding. Keeping it loosely covered will help keep out rain. Don’t put so much out that the bees can’t take it in a day or so. You probably don’t want to do this in a crowded neighborhood. It can start robbing, but even if it doesn’t the number of bees in the air can be disquieting to a nervous neighbor, and perhaps even a danger

Boardman Feeders

For beekeepers with smaller numbers of colonies, using the common Boardman feeder is practical. It’s easy to tell when it needs filling, it’s easy to fill without disturbing the bees, and it’s easy to install, plus it’s cheap. This feeder sounds perfect – but it has problems. It can incite robbing if it leaks near the

entrance of the hive. Some models requires glass jars which easily break in route to the beeyard and most importantly, bees can’t readily use this feeder when the weather is cool enough that they can’t break cluster to get to the feeder

INTERNAL FEEDERS

Division Board Feeders

These plastic feeders take the place of a single frame and are usually located at the side of the brood nest. To fill it, lift the cover or the super above it, hold it there and fill with a water can-like device. It needs to have a float in the feeder or bees will drown. The bees take feed from this gadget very well, but it requires removing a frame and moving equipment to fill it.

Comb Fillers

Comb fillers, available from bee supply companies, are used for spraying syrup into cells. In this manner, entire frames – full of syrup – can be placed near the brood nest. This is probably the fastest way for bees to get sugar syrup feed. But, sugar syrup will granulate quickly. This is not really a major problem for the bees, but it does result in sticky, crystallized syrup all over the combs.

Common “pump-up” garden sprayers can be used in exactly the same manner as the comb fillers described above. These are much cheaper, but will only fill a few frames before the sprayer must be refilled.

Hive Top Feeders

The basic premise of all styles of hive top feeders is for bees to move through openings up into the feeder which is positioned directly

Continued on Next Page

beneath the inner cover. The positioning of the various openings varies with the style of feeder. These feeders work well. They are easy to fill and have a large capacity; sometimes as much as two gallons. However, they must be completely removed before any other hive manipulation can be accomplished. Older style poorly sealed wooden feeders had a tendency to seep rather than outright leak. The newer plastic feeders avoid this.

Friction Pail Top Feeders

Simple, efficient feeders can be devised by using either plastic or friction-top (snap-on rather than screw-on) metal cans with a few small holes punched into the lid. The can or plastic pail is then inverted over the opening in the inner cover. Bees can move into the small area between the inner cover and the lid of the pail and feed from syrup drops hanging there. Since a vacuum is formed in the can, syrup is prevented from flowing out too fast. It is important that the lid fit tightly. Before placing a full pail or can on the hive, turn it upside down and hold it until it quits dripping. If it doesn't, try again. A leaky feeder will drown bees, and make an unholy mess on the bottom. Though not totally necessary, the pail can be surrounded by an empty deep super. This will keep the feeder from being knocked off by wind or animals.

Italian Queens Pendell Apiaries

Frank & Sheri Pendell
P.O. Box 40
Stonyford, CA 95979
(530) 963-3062

Selected For:

Honey Production
Hygienic Behavior
SMR Trait
Gentleness

Queens raised April - Sept.
Boxes of 54 @ \$10.75 per Queen
Boxes of 100 @ \$10.50 per Queen
Price includes shipping & marking

DRY FEED

Candy Boards

I don't hear of candy boards being used too much any more. I suppose they are labor intensive. A fondant-type candy can be made from simple recipes, molded into a wooden frame and put on top of the colony. A recipe commonly used to make sugar candy is:

- a. 15 pounds of sugar
- b. 3 pounds of glucose or white syrup
- c. 4 cups of water

Dissolve sugar in water by stirring and boiling the mixture until the temperature of the syrup is at 242°F. Let it cool to 180°F and beat thick. Pour into molds and allow to harden.

The commercial fondant that I have been feeding my hungry nucs is a variation on this category. Though more costly, I have no mixing expenses.

Dry sugar

This is the simplest, cheapest, and probably least effective way to feed bees. Normally, granulated sugar is poured around the oval hole in the inner cover. Bees will need water to convert dry sugar to simple syrup so this procedure would work better in a warm climate. Occasionally, some bees will laboriously remove the sugar and toss it out front, but most colonies will use it reasonably well. This procedure is frequently used during hard cold weather, but will also work very well during late Fall or early Spring.

Granulated Corn Syrup

Corn syrup granulates rather easily. I have known beekeepers who will take (literally) handfuls of granulated corn syrup and spread it on the top bars of the brood nest. Messy that it is, it is also fast, simple, and near the bees. It works alright if you can stand the sticky.

BE PREPARED TO FEED

Feeding beehives, at any time of the year, is a common procedure. Acquaint yourself with the various feeding procedures and be prepared to be helpful. Plus, be prepared to use different feeds and feeding procedures depending on when and how the colonies are to be fed. Feeding colonies is a basic management procedure. Know how to do it. **BC**

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

20% ←

White vinegar is counteractive to chalk brood, nosema spores, foul brood and parasitic mites (varroa, tracheal).

A special quick tach method that turns 5 tablespoons of white vinegar into steam (vapor) and introduces it into the front entrance for one minute and you are finished. (No need to take the lid off.)

Spraying straight vinegar into the colony does not work. It must be volatilized by steam.

Beekeepers who have used this machine claim a massive buildup of brood and bees, increasing splits and tremendous production. Requires a 120 or 240 volt generator.

References can be supplied.

Please write or call for more information,
U.S. Pat. #5,069,651

**Better Way Wax Melter
Honey Processors Ltd.**

116 11th Street SE • Altoona, IA 50009
515-967-4952

Buckeye Bee

Now taking orders for
Spring 2004 Packages & Queens
Call for Shipping Information

- Carniolan & Cordovan Queens \$15
- 2# Packages \$55
- 3# Packages \$60
- Five Frame Nucs \$100

Available March, April, May

Mail order to:
Buckeye Bee
P.O. Box 188
Utica, OH 43080

Call 740.405.4174

beekeeper100@hotmail.com
www.buckeyebee.com

The Status Of

FORMIC ACID

Bill Ruzicka

In The U.S.

I have been promoting the fact that "formic acid is not illegal in the U.S." A beekeeper and teacher from Iowa called me and told me that I should not use a double negative in the English language, therefore the **USE OF LIQUID FORMIC ACID IS LEGAL IN U.S.**

A lot of people (including some authorities) still believe that, "if it is not registered it is illegal." For these people the meanings of the words registered and legal have become synonymous but in fact they are completely different.

Registered means that an item is approved as a pesticide for use by the EPA, it does not mean it is legal. For example, Tymol is registered by the EPA and legal in North Dakota which applied for section 18, but (as I write this) it is illegal in Florida where it is not registered. Many natural substances are used against pests although they are not registered as pesticides.

Illegal is defined as an action taken which breaks Federal or State laws. Last year we received many invitations to state and local meetings in the U.S., to speak on the subject of safe and effective use of formic acid. Being a Canadian the last thing I wanted to do was to get in trouble with U.S. laws; therefore, I asked the EPA for a ruling on our seminars, on Formic acid, and the MiteGone® product.

The EPA's reply to the question, "Is it legal to hold seminars on the safe use of formic acid?" was "The people who enforce the issue in question is our Office of Enforcement and Compliance Assurance (OECA), who I just spoke to. According to them, **only advertising and sales of an unregistered pesticide is considered illegal. There is nothing to prevent you from 'promoting' the use of an unregistered product. All you are doing is giving advice,**

which is not considered as advertising or sales."

The EPA ruling on the MiteGone® product and method reads: "It has been determined at the EPA that your product [MiteGone] is an application method of applying formic acid. As such, it is neither a pesticide nor a device regulated by this agency. Thus, you are free to market it in this country [the USA] as long as you do not include formic acid with it. There are however, a few concerns. As you are aware, liquid formic acid is not registered for use in hives against mites. If the producer of this liquid knows that beekeepers are using his/her product in hives, then pesticidal intent comes into play and the producer

no dietary risk concerns with such use."

Consider:

- Formic acid is an unregulated product that is generally sold by chemical suppliers.
- Formic acid is not registered as a pesticide. Non-registration does not make it illegal to use.
- Using formic acid is similar to using borax or baking soda to kill ants, or using sugar dust or soy flower in dusting methods to control *Varroa*; neither are registered as a pesticide.
- A pesticide law has the intent to protect humans, the food chain, and the environment. Formic acid

"Using formic acid is similar to using borax or baking soda to kill ants, or using sugar dust or soy flower in dusting methods to control *Varroa*; neither are registered as a pesticide."

would be required to register the liquid for that use, and be subject to regulatory action."

So I read it, there are no laws on the federal books that prevent you, the beekeeper, from using formic acid.

FURTHERMORE there are tolerances of formic acid in foods.

The following quote from Apicure® (Gel-Pack pamphlet) reads that "Formic acid, because it is already a natural constituent of honey, was exempted by the EPA from tolerance level studies. In its approval, the agency states: "Because there are essentially no residues resulting from the use [of formic acid], the EPA believes there are

is a natural substance and a component of many foods.

WHY LIQUID FORMIC ACID IS NOT REGISTERED AS A PESTICIDE

Everyone I spoke to, including six private sessions with pesticide regulatory agents, all agree that the best solution to the problem would be to register formic acid. Unfortunately there is no one willing to do so.

MANUFACTURERS AND SELLERS laugh at the idea of registering formic acid for use in bee hives. Why would they spend a lot

Continued on Next Page

“Unless beekeepers and their state associations push for a Section 18 Permit in their states, they will join too many in the world in ignoring and avoiding the beneficial use of formic acid.”

of money to register acid if they only get liability issues in return? They claim they do not know formic acid is used for treating bee hives; therefore, they become exempt from all liability. Suppliers don't ask what customers are using the acid for; however, if customers say they want it for bees, suppliers will not sell it to them. Beekeepers must buy formic acid, then, declaring one of many legal uses – from bleaching concrete or tanning leather, to bleaching fabric or cleansing food packing equipment in a brewery or dairy. Purchasers of formic acid have to sign and receive declaration that they are an industrial user and that *THEY AND THEIR STAFF ARE TRAINED IN THE SAFE HANDLING AND USE OF FORMIC ACID.*

USDA The ABF passed a resolution in 2003 requesting the USDA to immediately proceed with registration of acid. The USDA, however, developed the “GEL PACK” and sold it to commercial operators. It is very unlikely they will proceed with an introduction of a cheaper alternative.

Registering formic acid has run out of supporters, (manufacturers, users, government researchers) who can actually sponsor registration of liquid formic acid in the U.S.

IN INDIVIDUAL STATES – THE SITUATION IS A LITTLE DIFFERENT

Most states have officers who can apply for a Section 18 Emergency Use Permit. **A practical solution would be for a state to apply for a Section 18 for liquid formic acid and concurrently introduce a limited pesticide applicator course in which beekeepers would be trained in the chemical's safe use.** It is usually up to state associations to push for this solution.

Before I began my trip through the U.S. presenting seminars, state officials were asked by both seminar organizers and myself for approval to hold these seminars. As well, we asked about each individual state's position on the use of formic acid in honey bee colonies. The answers and the reality of formic acid use are as follows:

1. In most states we were welcome. In addition to presenting to beekeepers we were often asked to present private sessions for government officials so they could acquire the knowledge and be able to make educated decisions on the use of formic acid within their state.
2. Many states do not have regulatory beekeeping officials or pesticide officials and the re-

3. A few states have good governmental leadership and may actually proceed with obtaining a Section 18 Permit with, or without, the limited applicator program.
4. A few states objected to our request to give a presentation and we did not proceed.

CONCLUSION

It is important to know that no country in the world has formic acid registered as a pesticide. Authorities are encouraging, promoting, just tolerating, or could care less about formic acid use. Two countries have something like an exemption rule which in effect is non-registration. In Canada it is called “Scheduling” and in New Zealand it is the “Ministerial Permit.” In reality it protects the government against liability as they have told the beekeepers how to use it safely and waived all liability.

During my trip I met beekeepers that have been using acid for many years. This seems to be increasing, from my discussions, as mite resistance to other chemicals is spreading.

Unless beekeepers and their state associations push for a Section 18 Permit in their states, they will join too many in the world in ignoring and avoiding the beneficial use of formic acid. EC

Bill Ruzicka is a commercial beekeeper and queen producer in British Columbia, Canada. He is the developer of the Mitegone® formic acid evaporator. For more information contact him at 250.762.8156, fax 250.763.1206 or email billruzicka@mitegone.com.

Queens

Minnesota Hygienic or Carniolan

1.Excellent Stock, SMR 2.Well mated 3.Reasonably priced

**Available
March 15**

**Lamb's Honey Farm
409.384.6754
RRT3Box N. 592
Jasper, Texas 75951**

Browning Cut Stock

Boxes are Ponderosa Pine/corners are notched.

- 9-5/8 Com. Boxes \$7.05 / Budget Boxes \$5.50
- 7-5/8 Com. Boxes \$6.20 / Budget Boxes \$5.20
- 6-5/8 & 5-11/16 Com. Supers \$4.40 / Budget \$4.15
- 5 Frame Com. Nuc Boxes \$6.45 / Budget \$4.95
- 9-1/8 #1 Frames \$.48 / All other sizes \$.46
- 1-3/4 Cleats \$.17, Bottom Bars \$.10
- Top Bars \$.18, End Bars \$.10

**1571 Hwy. 3 • Juliaetta, ID 83535
Phone 208.276.3494 FAX 3491**

Puzzle Pieces

The Latest Research News From The National Meetings

Kim Flottum

Researchers seeking answers to the puzzling questions of honey bee science seldom make monumental, ground-breaking, Nobel Prize winning breakthroughs. Rather, they make tiny, incremental baby step discoveries. Though the former would be their first choice I'm sure, the latter are welcome by those of us who struggle day-to-day with beekeeping practices in need of help. And each year in January, these researchers come together to show how far they've come since they last shared with us their advances.

A whole army of these researchers showed up at the American Honey Producers meeting in San Antonio in January. Some of the baby step discoveries are highlighted here.

The jury, it seems is still out on at least some of the advantages of using screened bottom boards.

Dr Keith Delaplane, University of Georgia and his team have been investigating the many facets of using an integrated pest management approach to the *Varroa* problem. Incorporating screened bottom boards and resistant queens in a combined study, the results are encouraging.

Using his previously discussed economic threshold of 60-190 mites dropping in a 24-hour period, he looked at the effects of screens, SMR and hygienic queens on *Varroa* numbers, honey production, months to reach that threshold, isolated colonies, and brood and bee production.

The goal, of course, is to keep labor to a minimum, reducing chemical intervention by extending the time between needed applications and maintaining the necessities - honey production, survivability gentleness and the like.

Screened bottom boards did indeed increase the time it took for colonies to reach a mite population requiring treatment (that is, building to that economic threshold number). Brood and adult numbers were higher for screened colonies, but, apparently only marginally.

He used a SMR line that showed reduced mite drop, longer time to reach that threshold, but a somewhat smaller population. Isolated colonies, using screens though, had reduced mite drop.

His conclusion - screened bottom boards, in his study were somewhat beneficial, especially when incorporating resistant queens, and isolated colonies.

Dr John Harbo, USDA Baton Rouge, had a bit different take on using screened bottom boards. He set up identical colonies, with equal numbers of bees and mites, and looked at mite buildup over time during a Baton Rouge Winter

After a couple of months he found that screened colonies had more capped brood, fewer mites on adults, and far fewer mites in brood cells. Honey consumption was about equal.

During the Summer he found the same thing - more capped brood and fewer adult mites in screened colonies than in those with solid bottoms. His conclusion - screened bottoms result in fewer mites in brood, and fewer mites overall.

Dr Harbo also measured mites in capped brood. He has already investigated this, and found that the percent of mites in a colony is a heritable trait of the bees. On average, about 66% of the *Varroa* mites in your colonies are in sealed brood (which ought to scare you a lot!).

It takes mites 12.5 days to go through their reproductive cycle in a cell. They remain exposed on adults for six to seven days. Extending this, then, if about 60% or so of the mites are in cells, a colony will support 4.5 mite brood cycles during 85 days (Harbo's experiment times). Reduce that, however, to, say 3% of the mites in a colony in the brood, and the colony will support only two cycles of mites - a very significant reduction in mite production. Right now, selection has produced bees that have reduced mite population in cells from that 66% down to 50%, reducing mite populations significantly already. This is indeed encouraging.

These two simple tools, screened bottom boards and resistant queens are slowing *Varroa* and reducing chemical use, and other resistant queens are slowing *Varroa*, reducing chemical use, and saving beekeepers money.

It gets better, read on.

Love em' Or hate em', the Russians are making progress. The biggest obstacle has been, it seems, the behaviors of the hybrids - the



John Harbo

Continued on Next Page

Russian/other mixes that are being sold. It took awhile to be able to measure this. Pure Russian stock seems to be working quite well, and though a bit different, are certainly manageable and definitely resistant to *Varroa* and Tracheal mites.

Dr Tom Rinderer presented the latest data on these bees. Again, honey production, when compared to an industry standard production queen, commercially available to anyone, was double in Baton Rouge and equal in Iowa and Mississippi. Mite populations, however, were significantly reduced with both pure and even hybrid lines, so it just keeps getting better. Importation of new Russian stock has closed, and the many lines will continue to be evaluated, with promising lines kept and those not working discarded.



Tom Rinderer

The most interesting bit was that there are Russian lines that have gone 1,756 days without treatment. That certainly extends the time between treatment we are all looking for

Dr Jamie Ellis, who has reported here on some aspects of Small Hive Beetle biology and their interactions with European bees in our colonies has added more data to the mix.

His trap testing experiments have resulted in some good recommendations in avoiding beetles. Place hives in locations avoiding woods, keep grass and weeds mowed in the apiary, treat the ground with approved chemicals, and if using traps, early season is best.

The traps he's testing include beetle food, which includes pollen, honey and even brood. He's also working with chemists who are investigating lures for beetles that are flying, and even those inside the hive.

Female beetles, it seems, can

lay about 3,000 eggs. To do so they either probe through a capping directly onto larvae, or, they climb into an empty cell next to a capped cell and go in through the side.

Interestingly African Cape bees (those native to the Small Hive Beetle's domain) don't seem to have great difficulty with the beetles. When comparing defensive behaviors or European bees though – bees removing larvae, eggs laid per cell, percent cells infested – he found little difference. He's still looking. But, he summed this up with a positive note – these beetles, he predicts, will probably be a nuisance – but not the menace they seem to be now. Time will tell, but those traps will help.

In the January issue Steve Sheppard outlined the study completed in Texas on controlling *Varroa* with a fungal parasite. The complete study was examined at this meeting and the results were astounding!

Spores were applied to *Varroa* infested hives as a dust, in syrup and on strips. All worked wonders. As good or better than any other treatment, and it lasts longer and it doesn't hurt bees. It's good stuff, or so it seems. So here's the challenge. An enterprising operation needs to take this the next step – mass production, studies on non-

target organisms, large scale field trials and registration. Business needs are next. The science is wonderful!

One more tidbit before we go. Dr Bob Danko, USDA Baton Rouge studied Russian vs. Italian bees in wild blueberry pollination. Italians, early in the



Bob Danko

season, were earlier risers, but the Russians soon caught up.

Though smaller to start, the Russians equaled the foraging population of the Russians in a week or so. Both bees were subject to sun and temperature fluctuations. Interestingly, when he analyzed the pollen collected, he found that 37% came from nearby pine trees (a very poor source of pollen), 32% from a wild flower in the rose family, only 30% from blueberries and 1% other plants. Feeding a pollen supplement early would seem to be a good idea to boost nutrition in these colonies.

Next month, results of the National Honey Board studies and a hard look at still-out-there pesticide problems. Stay tuned. **BC**

BEES & BEEKEEPING SUPPLIES
FREE CATALOG



RUHL BEE SUPPLY

17845 SE 82nd Drive
Gladstone, Oregon 97027 (503) 657.5399
Email: ruhlbeesupply@yahoo.com

Bee Suit Breakthrough - Totally Ventilated,
Cooler, Drier - Virtually Sting Free, Bee Tight,
1/4" Thick, Brass Zips, Price \$179 - \$199 - \$229
504.456.8805 Send For Free Info
GOLDEN BEE PRODUCTS, Dept. C
4405 Lake Villa Dr., Metairie, LA 70002

**For Your Queen
Needs Call**

**Queen Cells Available –
Shipped By UPS**

MIKSA HONEY FARMS

David & Linda Miksa
13404 Honeycomb Rd. Groveland, FL 34736
Ph. 352-429-3447
EMail miksaah@aol.com

**Hawaiian
Queen**

MAR. QUEENS

Ph. 808-328-2656

Toll free: 888-485-2244

FAX 808-328-7433

email: HIQUEEN@HIALOHA.NET
www.hawaiianqueen.com

Scientists tell us that the judicious use of miticides, following the instructions exactly, will prevent resistance, but this is not true. They also say the miticide is harmless to bees and humans, and this is not true either. When I was using the stuff, handling it still sealed in its original foil wrapper, I could taste the toxicity in my gums. I also noted a negative effect in the bees. And, on top of that, the stuff didn't even work. And yes, I followed the instructions to the letter. My good friend, third-generation grandmaster beekeeper Ormand Aebi followed the instructions to the letter also, and nobody follows instructions better than Ormand, and in two years he was completely beeless for the first time in three generations.

Why is the *Varroa* devastating to the European honey bee while lived with so nicely by the Asian honey bees?

For one thing, the Asians have a faster metabolism. The pre-imagoes spend a day or so less time in the cells, and since it's in the cells that the *Varroa* does its dirty work, the time differential is sufficient to give the bees the edge.

For another thing, the Asian characteristically hangs its combs out in the open with minimum shelter, like under an overhanging ledge on the face of a cliff. The Europeans, however, seek a cavity. Obviously, with the Asian combs hanging in space when a parasite falls it is gone forever. And the scientists have shown that the parasite does drop from the combs on occasion. In a cavity, there will usually be a surface close to the bottom of the combs, a joist in a wall, the bottom board of a beehive, the solid part of a tree, some place for the falling parasite to land and wait for a bee to which to attach itself.

Several years ago, I reasoned that screened bottom boards might be of use and went to work designing when all of a sudden they appeared on the market, and with sticky board inserts too, so you could even count the parasites. But the problem wasn't solved.

Charles Martin Simon

So I decided to take it further: No bottoms at all. My thinking was, obviously, that this would allow the parasites to fall away and disappear – like they do with the Asians. As for losing the ability to count them without the screened bottom boards and sticky inserts, who cares as long as they're gone?

First I planned on putting the bottom boards back when the weather got cold, but I caught myself thinking like a beekeeper, not an apiculturist. I was thinking of the bees as static things, not living, adaptable beings. And I reasoned it would be better for them if the bottoms were in fact left off during cold weather also. The bees would compensate for the increased exposure by tightening up the cluster, eating more honey to burn more calories to keep the temperature in the

cluster up to where it needs to be, raising their metabolic rates. They would become more like Asian bees, not as the result of mixing the species with the disastrous consequences that engendered, but as the result of replicating the lifestyle, and end up healthier – those with the will to survive anyway. Survival of the fittest is always the rule, so why try to get around it? When we artificially prop up the weak ones, all we end up with is perpetual sickness.



Besides, the Asian bees often overwinter in cold weather, and they're not in a cavity.

Here's a quote from Jamie Strange's article "The Bournacq Hive," in the October 2003 issue of *Bee Culture*: "It was not until after beekeepers began working in moveable frame equipment that foulbrood became a problem.... Also, because generally only strong colonies were Wintered, the beekeeper insured that he was keeping the best stock for the following year. These strong colonies did not have to be fed or treated for disease...the beekeepers were selecting for disease tolerant stock."

That is exactly what I am talking about, doing what it takes to make the colonies really strong and healthy. Except I don't think the moveable frames are the cul-

Continued on Next Page

BOTTOMLESS BEEKEEPING

prit. Moveable frames are helpful and not harmful, when used correctly. The problem is reusing combs too many times, which is the inevitable result of the pernicious practices of using foundation and extracting.

I keep my hives on stands at least 16 inches above the ground to prevent skunk predation, of which we have quite a bit around here. I have, however, worked with many feral colonies close to the ground and going strong, in the bases of trees for example. So placing bottomless hives close to the ground will probably be fine as long as the colony is strong enough, and if it isn't strong enough, nothing matters anyway.

Now the approach for a skunk would be different with a bottomless hive close to the ground. A skunk would have to stand up and expose its underbelly in order to scratch on the wall of the hive, or literally get up underneath it. Both approaches would subject it to serious attack.

I have been slowly converting my hives to bottomless, leaving some bottomed for comparison. Every single converted hive, after an initial short period of confusion, while the bees were figuring out what was going on and what to do about it, showed an immediate increase in vitality.

It is November as I write this, and several of my *bottomed* hives have already died from *Varroa*. Whereas the *bottomless* are going strong, much stronger than other hives in past seasons at this time of year, even those that went on to survive the Winter.

Advantages and Disadvantages of Going Bottomless

Bottomless hives are difficult if not impossible to steal. The bee thief, looking for the easy way, will find exactly the opposite of what he or she was looking for. It goes against his or her nature to mess with a bottomless hive, especially a big, strong, competent colony housed in falling-apart equipment (my favorite kind).

The breathing capacity of the hive is immediately and dramatically increased. No more moisture build-up or moisture-related diseases. No more debris on the bottom boards. Bottom board rot is a thing of the past, along with the need to replace.

No more slanting hives forward. Vertically straight hives make straighter combs (not that that matters), support weight better, and ride earthquakes better (that does matter around here).

And no more mouse worries. Without a bottom board and sufficient space between the board and the bottom of the cluster, mice can't even get started.

No more facing the entrances to the sun. You might think this is not important but it can be. I moved some colonies onto a lovely piece of land overlooking a large slough designated as a wildlife preserve, faced to the sun as I had been taught to believe was right. They steadily lost vitality and died. There is a fierce wind blowing straight up the slough directly into the hive openings facing south, which is the direction they need to face to get the most sun. Most sun means quickest warm-ups and most light for the longest duration, which means most work which means most production. I still catch myself feeling uncomfortable about it from time

to time. Unlearning is apparently harder than learning.

With bottomless hives, smoking for manipulations is much more effective with much less smoke.

There are some disadvantages: Decreased honey production for one. Or, is that a good thing?

You might think bottomless hives could be invaded easier by yellow jackets and cleaned out by robber bees. But there is a difference between how the guard bees function with bottomless as opposed to conventionally bottomed. In the

conventional setup, the robbers have only to get past the guards, which are positioned at the entrance looking out. Once in, yellow jackets can have their way virtually without challenge. With bottomless, the guards cover the complete territory, scanning in every direction, and it is not possible to get past them. I have watched yellow jackets working the bottomed hives while avoiding the bottomless. I think with the guards out in the open, the yellows get attacked a lot quicker and heavier, and they learn fast. Of course, the strength of the colony is going to be the key, as it always is. I just can't see a good strong colony getting invaded by anything except maybe bears, but we don't have bears around here. (Earthquakes, yes. Bears, no.) And besides, a bottomless hive would be no more vulnerable



With Spacer Strip around the edge - irrelevant when using empty super for space.

Skunks, yellow jackets, mice and Varroa all have a problem without a bottom to use.

to bears than a bottomed one. And if a weak colony gets wiped out, maybe that's a good thing too, saves the trouble of nursing it only to have it die off anyway, and it will; they always do.

For moving, each hive has to have a bottom board available. But there are probably better ways to close hives for moving than standard bottom boards with screened entrances. Come to think of it, I have many tops with feeder holes, left over from the bad old days when I used to feed. They would adapt excellently for moving bottoms, the end cleats forming convenient legs to keep the screened openings up and away from truck beds or floors or other hives when stacked, and allow the air to circulate. These could be stapled or duct taped on.

Loss of directionality. Bottomless beekeeping may not be for those who want to practice the safety procedure of staying behind the hives when manipulating, so as to keep out of the flight paths. Keeping out of flight paths is not what really reduces stinging incidents anyway. I'm sure it helps the keeper relax more to think he or she is doing it the "right way." What really does the trick is when the handler maintains a cool, level, detached state of mind, when there is no fear, and, most importantly, when that state is not forced or faked but real and native – and, of course, slow, deliberate, smooth, assured movements and appropriate smoke.

Don't assume the bees will be flying every which way in a 360-degree chaos. They will establish flight paths and preferred ways in and out of the hives, but they won't be consistent among the hives, as when an entire traditionally bottomed apiary is pointing in the same direction, and the handler will be able to work with that if he or she deems it judicious to do so. Conversely, to not work with that means to ignore it, which is my preferred method. It makes no difference whether I am in a flight path or not, as long as my state of mind is correct, which it always is. But don't get me wrong, I'm not saying I never get stung. I do from time to time, and I usually like it. But a few weeks ago, I was just standing there minding my own business, when a bee got right up in my face and stung me on the end of the nose. Ouch! Hurt my feelings too, that she would do such a thing to me without provocation.



Nice pair of bottomless hives.

enjoy exercising. Everything that lives has the ability to enjoy, and when bees enjoy life rather than struggle against impossible odds, their health will reflect their lack of stress. And every time we loosen of the regimentation of Langstroth-derived modern beekeeping, the bees respond positively.

A note on pollen trapping with bottomless hives

Bottom-positioned, self-cleaning pollen traps on standard bottomed hives provide a little help against

Varroa. Parasites get knocked off when the bees squeeze through the screen and fall into the pollen drawer and die. But the board that covers the drawer on the top of the trap, which prevents debris from entering the drawer, forms another

hive bottom where bees can walk around and fallen *Varroa* can wait for a ride back to the brood area.

The solution is an eighth-inch mesh screen above the debris board, positioned on its own frame which is not attached to the pollen trap so that it can be easily removed for cleaning. With this screen in place and the trap used on a bottomless hive, it is more effective against *Varroa*.

There is a wire-meshed space across the rear of the pollen trap and exit holes at the front, which could allow some mites to fall through. But when the trap is placed over a bottom board, any mites that might fall through will end up on the bottom board, and they might get rubbed off when the bee returns through the screen

Continued on Next Page

***Our modern ways
molly coddle bees with
one hand, and abuse
them with the other.***

or they might not. But without the bottom board, any that fall through will be gone forever, and those that fall through the debris board screen onto the debris board will die there waiting for bees. If it's not true, then a sticky board could be placed on the debris board, or it could be coated with an essential oil.

With my first converted pollen traps, I ran a half-inch strip around the outer top of the traps to provide space between the comb bottoms and the screen. Then I started using an empty super, between the pollen trap and the next super up, that had comb, which made the spacing strips unnecessary. I manage the colonies so they build new combs above not below the bottom combs.

The space added by an empty super decreases the number of bees that would be walking around on top of the debris board or screen, since the bees mostly crawl up and down the inner sides of the super going to and from the combs, and might even make the screen unnecessary, especially when the pollen traps are removed in the Fall and Winter, which they should be. I realize some keepers simply open the flyway and leave the traps in place, but that's not a good idea because the exit cones, unused, get plugged with debris. So since you have to take them off to clean anyway, you might as well leave them off for late Fall and Winter.

Our traditional modern ways molycoddle the bees with one hand while abusing them with the other. Is it

any wonder they can't get it together?

What I am proposing is not good for business. Instead of adding products, I'm taking products away. Instead of increasing honey production, I'm decreasing it. But a little honey is better than none, and dead bees make no honey at all.

Bottomless beekeeping, combined with foundationless (one of my favorite not-things), will result in a smaller, faster, stronger, healthier bee, less susceptible to disease and predation.

My intention is not to return beekeeping to the dark ages, but to take stock of what works and what doesn't and to mix and match methods toward the goal of maximum health rather than maximum production. Bees are incredibly powerful creatures. Given half a chance, they are unstoppable.

Both philosophically and practically, the *Varroa* has been a benefit to bee culture if not beekeeping. To use the words of my good friend, the revolutionary British apiculturist Ian Rumsey: "We have overcome an enemy by making it our friend." Actually, we have overcome many enemies. What we must do is get out of the way to allow the bee to develop into the world-beater it can and should be, the very capable creature that can triumph over the harsh realities of life as it is not as it used to be or we wish it was. **BC**

Charles Simon is a student of beekeeping, and a bee remover by trade.

PACKAGE BEES & QUEENS AT BRUSHY MTN. BEE FARM

MARCH 27TH

APRIL 17TH

MAY 8TH



- PICK UP YOUR PACKAGE BEES AND QUEENS & YOUR EQUIPMENT TOO!
- SAVE SHIPPING CHARGES
- DON'T LET THE POST OFFICE RUIN ANOTHER PACKAGE, LET US HAUL IT FOR YOU!

WILBANKS QUALITY BEES, SELECTED FOR PRODUCTIVITY, GENTLENESS, MITE & DISEASE RESISTANCE, COLOR, RACE AND OVERWINTERING

	1-9	10-25	25 OR MORE
WILBANKS PACKAGE BEES			
2 lb pkg with young laying queen	\$40.00	.. \$38.00	... \$35.00
3 lb pkg with young laying queen	\$48.00	.. \$46.00	... \$43.00
4 lb pkg with young laying queen	\$56.00	.. \$54.00	... \$51.00
5 lb pkg with young laying queen	\$64.00	.. \$62.00	... \$59.00
Extra young laying queens	\$12.50	.. \$11.50	... \$10.50

ALL ORDERS MUST BE PLACED AND PAID FOR 6 WEEKS PRIOR TO DATE OF PICK-UP



610 Bethany Church Rd.
Moravian Falls, NC 28654

SendForOurFreeCatalog

ADD \$5.00 TO PRICE OF EACH PACKAGE FOR HANDLING.

1-800-233-7929 FAX 1-336-921-2681 www.beeequipment.com



James E. Tew

Kids

At

Bee

Meetings

In January I attended the American Beekeeping Federation meeting in Jacksonville, Florida. I had not been to this meeting in a few years so it was pleasant to be back among beekeepers who I have known for many years. During one of the sessions, I gave a presentation entitled, *Bees and Beekeeping, We've Changed*. My emphasis was on you, the beekeeper more than mite or queen problems. In my university extension responsibility, I have found that I deal with people more than bees. Without an appreciative commodity group I would have a hopeless struggle defending my bee program – even if I had the best queen in the world or even if I had the perfect way to control mites. As important as good queens and mite resistant bees are, living, breathing beekeepers are much more important to my program. That's where you come in.

Are there more of you?

During the passing years, I have thought, talked, pondered, and considered numerous ways to entice new people into beekeeping. I can't tell that anything I have ever tried has been remotely successful. I still essentially don't know why some people come to beekeeping while others, who have interest, don't make the move.

Should we start with kids?

I want to say – right up front – that I completely support all kinds of kids' bee programs. Such programs at bee meetings, in school classes, and at outdoor events are always enticing to kids. Proper beekeeping presented to these young people can only be a positive thing. So, in all cases, do it.

But I question whether or not we are doing this to get new beekeepers. A few sentences from now, I want to ask you several questions about why you started in beekeeping, but I will predict that very few of you started as a kid and kept bees through all the ensuing years.

One of my Kid points

One of my points is the frequent comment made at bee meetings, "Not enough kids are at this meeting." There are two kinds of kids at bee meetings – kids you want to be there and kids that you wish were

on another planet. You won't have any problem telling the difference. As adults, I sense that we feel that an interested young person will sit right through a session on antibiotic use to control American foulbrood with rapt attention. That takes a special kid. More often than not, a kid was coerced into coming to the session after being promised some reward on the way home.

Be careful for what you wish, for you may get it. Think about it. Most beekeepers are well on up in years and they go to a meeting where kids abound with energy, noise and needs. In an ideal world, we are all loving parents and grandparents, but at a bee meeting, we are sometimes stressed by all the extra energy. So what would be the perfect percentage kid/adult mix – 10% kids, 40% kids – 70% kids? How many kids do you really want at the meeting? Honestly, I have become very accustomed to the small number of kids who can't escape the event and who sit quietly while the adults do adult bee things. I always try to include them, but at the same time respect them for being trapped there.

In our archives I have photos of the Ohio State Beekeepers' Association meeting from 50 – 75 years ago. There are no kids in those photos. (I wonder if the kids were there, but off doing kid things – just as kids today would be doing – rather than having a tiresome photo taken.) I don't ever know of a time when training young people was the system used to develop new beekeepers.

Clinton Grafton, 13 years old, already an Ohio beekeeper for several years.



Parallel worlds

It is though there are two worlds. One is our common adult bee meeting world while the kid world is the alternate bee world. This alternate world is at school where you, the adult beekeeper, sometimes visit to relieve an over-worked teacher. Or this alternate world is a separate room where kids roll beeswax foundation candles while the adults worry about chemical contamination in the next room. The alternate world can be the bee program that is occasionally aired on the kid's programs such as "Reading Rainbow." The National Honey Board has excellent materials for kids. My local group, the Tri-County Beekeepers' has kids' programs at their annual workshop and even let kids in free.

If you truly want significant numbers of kids at your bee meetings you should be prepared to provide some aspect of the alternate world to these young people. A bored kid at a bee meeting is like a poorly maintained observation hive – they both leave bad memories. I have three grown daughters who grew up in my beekeeping life. They have been exposed to beekeeping since they drew their first breath. But at this very minute they could not tell you the difference between a super and a frame. They have been to innumerable bee meetings and sat through hundreds of bee discussions. Simply going to meetings and being around beekeepers will not always make one a beekeeper.

The honest reasons

There are two simple reasons for having kids at bee meetings. Baby sitting is the first. The parents wanted to go the bee gathering and they didn't want to leave the kids at home. Having a good kids' program is a viable reason to support the adults' presence. There is nothing wrong with a baby sitting service.

The second is to begin the process of developing beekeepers of the future. In most cases this is a long-term investment taking years to come to fruition. Entertain, educate and give a good experience on the bee subject, and years later when this young person is older, they will have good memories of bees and may be interested enough



My oldest daughter at 3 years. Still not a beekeeper at 28 years.

to explore our industry. This is a long shot, but a shot worth taking.

Obviously, the hope is for a productive mix of both reasons – the kid is tended while the meeting is on-going and the kid is enthralled enough to stay in beekeeping for the long term. This is an even longer shot, but again, a shot worth taking.

Sometimes these investment strategies are expensive. It's common for the local group to select a deserving kid and give him/her a beehive and ancillary equipment. There must be some, but I don't know of one immediate success story from such donations. Normally after a year or so, the kid is off learning to love and to drive. Beekeeping is gone from his/her mind – at least for that time in his/her life. I am not opposed to giving the equipment, but I don't see any significant difference between kids who got major donations and kids who got a discussion from a visiting beekeeper in school.

You were a kid once

There was not a single beehive anywhere in my early life. I didn't know any beekeepers nor was I wild about honey as a food. My memory of bees is primarily one of wasp stings and puffy eyes. We all have our stories. You were a kid once and I'm sure you have a variation. I have

always had an interest in biology and things biologically related. As a college student, I pursued entomology finally specializing in apiculture. My interest in bees has both a biological and woodworking basis – but that's just me.

Bee Culture frequently conducts statistically based surveys. I realize that my few questions that follow could not be used for anything other than conversation, but I would appreciate you telling me a bit about your beekeeping genesis for subsequent compilation. If enough of you communicate with me, I'll let you know the summary of the results in a future article.

Your Beekeeping Birth¹

1. **Do you sense that you were drawn to beekeeping by some past childhood beekeeping experience?**
2. **At what approximate age were you when you started keeping bees?**
3. **If you didn't have one, do you feel that an early beekeeping exposure would have made you a beekeeper at a younger age?**

I have no agenda

As you read this you may be inclined to think that I am negative toward kids in beekeeping. Absolutely not true. As I said earlier, I totally support kids' beekeeping training programs. My hypothesis is that few of us started beekeeping as a kid. But more interestingly is that I have no information on whether or not one starts beekeeping later in life in response to some childhood beekeeping stimulus. We frequently have kids' programs at our meetings. We are frequently concerned that so few kids attend our meetings. We like to have young people at our meetings, but the hard question is, "Are these the kids who later become beekeepers?"

It's all in the personality

I'll bet you that it's all in the personality. Some of the kids at the meeting – having the personality for beekeeping – will later become adult beekeepers. Yet there are kids right

Send me your responses at Tew.1@osu.edu with Bee Survey in the subject line or James Tew, Bee Lab OARDC Entomology, Wooster, OH 44691

Continued on Next Page


now who have never attended a bee meeting but who have the personality for it, who will also become beekeepers. One size will never fit all.

Overall, the group I absolutely agonize over the most are the people who have the personality for beekeeping but never know it and consequently never become one of us. I've never flown an airplane. I wonder if I would be great pilot if I tried. I wonder if I could be a potter. I've never tried that either. I wonder if I could be a hostage negotiator. I talk fast. Would that help? I don't have a clue. No doubt you and I have potential undiscovered attributes that we will never develop because we were never exposed to this unknown thing.

Bottom line

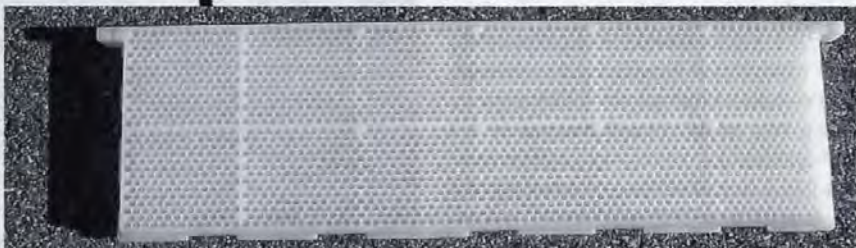
Kids come to bee meetings for several reasons. Most of these kids will not become adult beekeepers, but a few will. On the other hand, other kids who never were exposed to our traditional bee industry will also become adult beekeepers. Problem is, we can't tell which kid is which. So we shotgun the area with beekeeping information. At our meetings, in schools, on TV, anywhere we can to expose as many people as possible - both young and old - all in order to find those few special people who can grow into being one of us - a beekeeper. We've got to keep looking. **BC**


Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684, Tew.1@osu.edu; www2.oardc.ohio-state.edu/agnic/bee/; beelab.osu.edu/



A stroke can be a mind-blowing thing

One Piece - **permacomb** Buy it ONCE
FULLY DRAWN Buy it for LIFE



Order NOW **John Seets - National/International Distributor**  Medium size only
for Spring!! **410-471-4335 PermaComb@hotmail.com**

EAS SHORT COURSE - Clarence Collison Dewey Caron • John Skinner • Maryann Frazier Dave Heilman • Ann Harman • Bill Troup • Jim Tew Jennifer Berry Dennis vanEngelsdorf • Tom Webster • Joe Traynor • Marla Spivak Cliff Sunflower Mike Stangellini Jeff Pettis

EAS CONFERENCE - Marla Spivak • Mike Stangellini • Jim Tew • Cliff Sunflower Maryann Frazier Dennis vanEngelsdorf • John Skinner • Mike Embrey George Clutter • Nancy Ostiguy Tiffany Myers • Jeff Pettis Diana Cox-Foster • Heather Mattila

EAS 2004 - Aug. 9-13 - 7 Springs, Champion, PA
visit www.easternapiculture.org



BREEDER QUEENS
Pure SMR - SMR Hybrids - Russian - Carniolan
Minnesota Hygienic Italian - Cordovan Italian
All queens are Instrumentally Inseminated
Selected for mite resistance, hygienic behavior,
gentleness, and honey production

Breeder queens best of the best.....\$250
Select queens - untested breeders.....\$75
Plus \$25 shipping UPS Overnight

GLENN APIARIES
P.O. Box 2737
Fallbrook, CA 92088
Ph./Fax (760) 728-3731
e-mail: queenb95@aol.com

Send for a brochure or visit our website:
<http://members.aol.com/queenb95>





Queen Right Colonies
The Beekeepers Shop
A full line of beekeeping supplies

Package bees and Nucs,
Group Rates Available

Taking orders now for
Spring Packages - 2#
Italian & New World Carniolan
(from California - NO Small Hive Beetle)

Also Available
QUEENS
\$12.00 each
Marked queens - add \$1.50 each

Denzil & Sheila St. Clair
43655 S.R. 162 • Spencer, OH 44275
440.647.2602
QRCstclair@midviewinternet.com



Beeyard Safety

Bill Owens

When I was introduced to Kim Flottum at the Georgia State Beekeeper's Association Fall meeting last year, I was wearing my work jacket, and from the patches on it he knew that I was a firefighter. Our conversation soon turned to emergencies and safety in the beeyard. The discussion drew in several other beekeepers, and as all beekeepers do, we started trading stories. As the stories grew, Kim suggested I write this article.

Never have I given much thought to emergencies or safety in the beeyard. As I drive out to my beeyards, rolling through my mind are all the things that need to be done. I could be thinking of supers that should be added, hives that need to be requeened, or one hive may have a problem that requires special attention.

But as a full time firefighter I have seen more than my share of mishaps. The worst are those that could have been avoided. We should never take for granted our safety, or the safety of others, whether at home, work or in the beeyard. Here are some tips that can help you.

Preplanning Emergencies

Preplanning for emergencies means taking the time and learning what to do *before* an emergency occurs. During an emergency time is of the essence! Every second counts. Whatever you do to save time before the emergency will help.

In an emergency most of us will remember to call for help, but how are you going to call the emergency responders? Take a cell phone with you. Having an emergency is bad enough, not being able to call for help makes it worse. Make sure you have 911 or your local emergency number(s) programmed into the phone.

What about the address? Many apiaries are hidden from public view. Is yours located on property that doesn't have an address? If it does, it would help you to know the address across the street or beside your apiary. Contact your local fire department and have them come by your beeyard. It will let them become familiar with where you are. They will also be able to find out if an ambulance, or rescue truck will be able to gain access to your yard. Ambulances and rescue trucks may not fit where you can drive your vehicle. If you keep gates locked you may be able to give a spare key to the fire department so they have quick access to you and your property. Some fire departments will not use forcible entry without a police officer present. Waiting for a police officer will cost valuable time.

When you invite the fire department to your yard

take the opportunity to teach them about honey bees. Emergency responders will have the same fears as most people around honey bees. They may need special training that only you can give them. See if their equipment will protect them from the bees. They may want to buy a bee suit or at least a veil. Maybe you have an extra one they could have, or you could leave one in the beeyard. Better, your club could provide several for each vehicle. You could keep one in an area that only they would have access to.

Working Alone

Try not to work alone. Take someone with you if you can. Working alone should be your last option because too many things can happen. You've heard stories where someone was hurt and it took hours or days before they were found. If you have no choice and you have to go out alone, tell someone where you are going, and what time you'll be back. Have a check in time to call a friend or relative. Call in every hour or so.

Do you have more than one apiary? Make names for each one. Make sure someone knows which one you may or may not be visiting that day. It will be hard for someone to locate you if they have to go to every beeyard. If you make a check-in time others will know about where you are if you don't report in. This allows them to come to your aid faster.

Your First Aid Skills

You need training too! Everyday people see friends and family that become injured or sick and they don't know how to help. Often they cause more harm than good by not doing the right thing, or doing nothing at all. Knowing what to do in an emergency can be the difference between the life or death of your friends and loved ones.

Everyone should know cardiopulmonary resuscitation (CPR). I could not imagine watching anyone experiencing cardiac arrest and not being able to help. Contact your local Red Cross and see if they have any up-coming classes. The Red Cross also has basic first aid classes that includes a section that covers insect bites and stings. The prices are minimal, and they can vary by location, but they're still inexpensive. The cost covers only the materials that will be used in the class, and the benefits from the skills you gain will far out weigh the cost.

If you have had previous first aid training consider getting a refresher course. The medical field is con-

stantly changing and improving. Don't let yourself become over confident. Keep up with improvements. A refresher course will not take the same amount of time as the original certification. Your CPR certification is only good for one year, and recertification in first aid is every three years.

Check to see if your children are old enough to sign up for the classes. Children have saved the lives of many adults. Not only can you sign them up for first aid classes, but teach them how to use 911 or your local emergency number(s). You can have them do a test call to 911 by letting them dial the number. Have them tell the operator their name, address, and that they are learning how to use 911. Once the child is through the operator will want to speak with an adult to make sure it was a test call. If you don't feel comfortable with the child calling first you can call ahead, and inform the operator of what you would like to do.

Allergic Reactions

An allergic reaction comes from your immune system having an exaggerated response to a foreign substance (antigen). The reaction can be varied, and ranges from a skin rash to anaphylactic shock and death. Anyone can become allergic to bees, and it doesn't matter how many times you have been stung or how long you have been a beekeeper. As you live out your life your immune system is constantly building. As you come in contact to different antigens (like bee stings) your immune system will make antibodies to counter them. Until you are stung, your body has no defense to a bee sting. After the first sting your body will build an antibody to fight the antigen in the sting. Unless you are tested there is no way of knowing whether you have become (or are) allergic to stings.

Signs and symptoms of a severe allergic reaction commonly include: Flushing of the skin, with hives and itching; difficulty breathing, caused by the swelling of the airway; and an increased heart rate, with dizziness and headache. Abdominal cramps with nausea, vomiting, and diarrhea have also been reported.

Many beekeepers have Epi-pens on hand for allergic reactions. Most are concerned for visitors to the apiary but few worry about themselves. However, there is no guarantee you will never become allergic to bee stings. You can ask your family doctor about getting an Epi-pen. Some may not want to prescribe one to you without a documented sensitivity to bee stings, but generally they are supportive and willing to help.

Heat Stress

Heat stress comes in three forms; Heat cramps, heat exhaustion, and heat stroke. Heat cramps are the most common form of heat stress. Once you are exposed to a hot environment your body starts to cool itself by sweating. After an extended period of heavy perspiration metabolic salts from your body will be depleted, resulting in painful cramps. Symptoms include moist, pale, cool skin, and muscle cramps generally located in the legs and abdomen.

With mild cases of heat cramps or heat exhaustion move the person (or yourself) to a cool environment. A shady spot is good. Remove some clothing. Drink cool water or a sports drink.(You have some with

FIRST AID KIT

When deciding on a first-aid kit for your beeyard, pick one designed for the outdoors, for sports, or construction type work. A first-aid kit designed for an office will not have the things you may need for a bee sting or a deep cut. You also need to add some things to your first-aid kit, or you can make a kit yourself. Here are the things to have:

- First-aid manual
- 2 pair latex gloves or other sterile gloves if you are allergic to latex
- Sterile gauze
- Adhesive tape
- Adhesive bandages in several sizes
- Elastic bandage
- Antiseptic wipes
- Soap
- Tweezers
- Sharp scissors
- Safety pins
- Disposable instant cold packs
- Calamine lotion
- Alcohol wipes or ethyl alcohol
- Thermometer
- Mouthpiece for administering CPR (can be obtained from Red Cross)
- Your list of emergency phone numbers
- Blanket (stored nearby)
- Flashlight and extra batteries

Prescription medications

Keep any prescription medications that you take every day in your kit. Rotate them to keep them from becoming out dated.

Non-prescription medications

- Aspirin
- Antihistamine, for allergic reactions
- Wasp and bee sting relief pads
- Antibiotic cream (triple-antibiotic ointment)
- Antiseptic solution (like hydrogen peroxide)
- Hydrocortisone cream (1%)

you, right?) It can take 24 to 48 hours to recover fully from this event. You shouldn't be exposed to any excessive heat until you have recovered fully. In a more severe case seek medical attention immediately. If you call 911 the emergency operator will help you with any first aid that may be needed.

Heat exhaustion results after you have gone through heat cramps. By this point your body is not only low on salts but also critically low of fluids. One of the most notable signs of heat exhaustion is a dazed-like state. Other symptoms include the same signs as heat cramps, plus weakness or exhaustion, dizziness, rapid, but shallow breathing, and heavy perspiration. It is also possible to lose consciousness.

Heat stroke is the most severe form of heat stress. Your body has depleted itself completely of salts and fluids, and your body's cooling system starts failing, and may stop functioning altogether. This absolutely requires immediate medical attention. Common symptoms include hot, dry skin; rapid, shallow breathing; rapid pulse, and loss of consciousness. Seizures may occur also.

If you are with somebody who has this, move them to a cool spot, and call 911 or your local emergency

number immediately. Remove any unnecessary clothing. Try and keep the skin wet with sponges or towels. Remember, the cooling mechanisms are not working, and the body's temperature will be well above normal and rising. You have to cool them down.

Some tips to help protect yourself from heat stress. Drink plenty for fluids the day before working in a hot environment. Avoid drinks with caffeine and alcohol, since they will only dehydrate you more. Get plenty of rest the night before you work. Drink plenty of water or sports drinks while you are working. Wear clothing made of cotton. Wear a vented hat and long sleeves, which will keep direct sun off of your head and skin.

General Safety and PPE

Our beeyards are full of hazards. Take a tour of your apiary to see what type of hazards you can find. Like all work places, THINK SAFETY It's up to you to have a work place free of unnecessary hazards. By starting good safety practices, your apiary can maintain a higher level of safety. Make a checklist, and go over it every time you visit your yard.

Personal protective equipment (PPE) is almost always neglected. I find it amazing that beekeepers spend the money on veils and gloves but seldom use them. I may be going out on a limb but hear me out.

Honey bees will defend their hive. Honey bees target dark areas and small orifices, like your eyes, ears, nose, and mouth. Although we continue to select our queens for gentleness, the honey bees' acts of kindness should never be taken for granted.

Honey bees don't always react the way we think they will. Accidents happen. When they do the bees will be happy to show you just how aggressive they can become. It is fairly simple. If you want to sit around and tell stories of how you were stung 100 times, and your eyes were swollen shut for a week, be my guest. I might read about you in the "Darwin Awards"

Housekeeping

Our bees work hard to keep their hives clean. Selecting for hygienic behavior is on the rise. What about the bee yard itself? Good housekeeping is one of the "firsts" in a safe work place. Like the bees we should keep the area clear for us to move freely. Empty hive boxes, and other hive parts not in use should be stored in an area away from daily activities.

Don't stack empty hive boxes too high. Generally anything over head-high is too high. Reaching over your head can be dangerous. It can cause you to lose your balance, or the boxes may tip over and fall on you. Keep the stacked boxes lower so they will be easier to manage and access.

Tall grass can be a hazard. Not only is it difficult to walk through, but also tripping hazards can be hidden from view. It is also a good hiding place for snakes and other animals. Imagine having a young deer jump up from the tall grass right in front of you while walking by carrying a full, heavy hive of bees. Remember, a neat and clean apiary will be a safe apiary.

Lifting

As an emergency responder we are trained to size up patients before lifting them. As a beekeeper this

can be a little more difficult. Beehives look alot alike. One may weigh 10 lbs empty, or 100+lbs when full. Test the weight by lifting one side of the hive. You can judge the weight to see if you can lift it safely. Know your limitations, and don't exceed them. Back injuries are far too common in the work place. The beeyard is a work place.

When lifting, use your legs and not your back. Keep your back straight and locked. Don't twist or turn when lifting. Try to keep the weight as close to your body as possible. Most beehives will require two people to lift them properly. Always have someone help you lift any large bulky objects. Never lift anything that you think is beyond your limitation.

Check under a hive before lifting it. All types of critters can be found enjoying the space under a hive including snakes, spiders, scorpions, skunks, rats, and mice, just to name a few. Finding a snake between your feet after you have lifted a 100 lb hive leaves you in an unusual situation. What do you do? Drop the box and run away from 40,000 angry bees and one snake, or try and move away slowly? I'd go for checking under the box first.

Fires

Fire is the single most destructive factor in the world. It has cost more money and killed more people than any other hazard. Many wild fires are set by accident. As beekeepers we use a smoker to calm our bees. Smokers are a necessary hazard that can be safely used if common sense is applied. Don't use a cigarette lighter to light your smoker. That will require you to light the fuel too close to your hand. Use a longer grill lighter. Put the fuel into the smoker and light it there. Never light the fuel in your hand. Very dry straw and pine needles can burn faster than you think.

Light your smoker on bare ground away from other flammable materials. Remember, the outside of the smoker can become red hot after use. So after your smoker is lit keep it away from flammable materials. Don't lay it down in the grass or on a truck bed liner. Keep a fire extinguisher near by; one in each vehicle, several in your home, some in the honey house, barns, tool sheds, and any other out buildings. (Would you believe me if I told you my wife hates it when I go shopping for fire extinguishers?)

After you have finished with the smoker, don't use your hand to remove the smoldering embers. If the embers don't drop freely from the smoker, use a hive tool. Empty it in a safe location. I put my unburned, smoldering fuel into a small steel trashcan. And don't leave the unburned fuel unattended. Make sure the fuel has been put out completely before you leave. Clean out any built-up tar or carbon in the spout, which will make your smoker work improperly.

I hope this has been as valuable for you as much as it was for me. Safety is your choice; because no one will do it for you. It comes down to how much you value yourself, your friends and your loved ones. **BC**

I would like to thank; The City of Monroe Fire Department, Walton County EMS, Walton County 911 Center, and The Walton County Chapter of the American Red Cross. Their assistance with information in this article is greatly appreciated.

MEETING PLANNING

You've developed a Time Line, filled in the details of date and place, finished the program planning and obtained speakers. Now it is time to promote the meeting, to attract an audience.

Ann Harman

The first promotion should be put on your Time Line right after you have obtained at least a few speakers, particularly one or two that will attract attention. Does your organization have a newsletter? Monthly? Quarterly? Never? If the latter, now is the time to mail promotional material to your membership list. A one sheet flyer, triple folded works, that contains information you already have about the meeting: date, place, some speakers. The sooner you can encourage members to put this date on their calendars the better they can plan to attend. As speakers and workshops firm up, and the meeting date gets closer, plan on sending out another flyer, and even handout at the library, garden centers, the local paper and to other associations.

If this is a state association meeting, all promotional material needs to be sent to all the local associations in your state. Notify adjoining states' associations, too. Find out their newsletter deadlines put those on your Time Line so you don't miss a single one. If your meeting is for a local association, promotion needs to go to those local associations surrounding your area, even if in an adjoining state. Make good use of the Who's Who on the *Bee Culture* website where you will find the contacts of state and local associations, nearby. That information makes your job easy. A helper to take care of promotion is a valuable person. I hope you have one. You will soon find out that promotion occupies many places in your Time Line.

Good promotion will fill your meeting room. By the way, the appearance of a filled meeting room, whether it is for 75 or for 200 or more gives the invited speakers

the impression of an enthusiastic group eager to hear what is being presented.

Make good use of your association newsletter. Just as you are working closely with the treasurer, you will work with

the newsletter editor. Every issue needs to have meeting information. Put newsletter deadlines on your Time Line so that the editor does not have to jog your memory. The issue of the newsletter just before the meeting will be the most important one. It should contain the program for the meeting plus reminder comments about auctions, door prizes, vendors, spouses programs and any other features.

Interest in attending the meeting can be achieved by using biographical material for one or more of your speakers. A few words about their topics will also attract attention. Include a brief description of any workshops you will be featuring. Take a look at your program. Do you have some parts of the program set aside for new beekeepers? Good. We need all the new beekeepers we can find. Give that information a featured place in the newsletter.

Yes, you need to put announcements of your meeting in the bee journals.

These dates are easy to put on your Time Line. Deadlines are six weeks before the scheduled issue. However, if your meeting is early in the month you will need to have the announcement appear in the issue before. Take a look at the information already in the journals to give you an idea of how to compose your announcement.

If your meeting will involve an overnight stay, either the night before or during a several-day meeting, information on motels/hotels is necessary for those coming a long distance. You can (maybe) negotiate group rates. Ask the motel/hotel for a brochure so that amenities and directions are clearly stated in your promotional material.

For both a one-day meeting, and definitely for a multiple-day meeting, consider having a Spouses Program. Museums, craft fairs, historical sites, and local events combined with an interesting (but reasonably priced) restaurant for lunch offer spouses a good reason to come. But this information needs to go on your Time Line early to give attendees enough time to consider coming to the meeting. Then promotional follow-up should be in every newsletter and don't forget to put it in the bee journals also.

Auctions of various types – silent auctions, Chinese auctions, auctioneer auctions – are always popular. It would be nice if a donated big or fancy item can be announced in your promotional material. It may encourage the attendees to participate more in the



auction. If the proceeds of the auction will be used for a specific purpose, be certain to include that information in your promotion. Just keep in mind that some beekeepers attending your meeting may be there for the first time. Yes, you need to make a good impression so they will return, but you need to let them know about the day's activities. You don't make friends when they go home grumbling that they "should've brought the checkbook."

The number of people who say they are just interested in bees is surprising. Many people have heard that bees and beekeepers have a problem (mites) even if they are not sure just what the problem is. A few of these non-beekeepers may be interested in attending a beekeepers meeting. You can reach these through promotional material in various places. Can you, or someone in your association, make a few posters? The posters do not have to be very big – an ordinary sheet of 8½ x 11 paper is adequate. Colored paper is good, except for red.

Black print on red does not show up. Red can be used for a border, however, or for some design on the poster

Here are some suggestions for placing these posters (you may well think of others). Usually people just interested in bees are also gardeners.

Take some posters to places that are selling gardening supplies,

including hardware stores. Your local libraries are also a great place for posters. Some Post Offices and supermarkets have a bulletin board – another good spot. See if your local Farmer's Co-op and other feed stores have a bulletin board. If yours is a state meeting, have some members of your local associations take posters to appropriate locations. Now you can put "poster placement" on your Time Line, probably about two weeks before the meeting. Many public places clean off the bulletin board frequently so the two-week time is appropriate.

Check with your local newspapers to find out their deadlines and requirements for meeting notices. While you are talking to someone at the newspaper you can suggest that the meeting – or at least parts of it – would make a good story. Discuss your program with the newspaper. An article with photos of an active or participating workshop may interest a reporter more than just a speaker at a podium. Oops – a podium. Did you find out whether a podium will be available at your meeting place? Better do that right now. And how about that sound system.

Get in touch with your local TV station. Even a few-minute clip of someone opening a hive, demonstrating equipment, showing varietal honeys, or even a honey show is good publicity for bees. Some communities have a magazine. These usually feature something interesting going on in the area. With enough advance notice a reporter may visit your meeting and write an article, complete with photos, thus giving honey bees more good press.

By now, you'll realize that a well done time line is worth its weight in gold.

Be sure to contact such places as the Farm Bureau, just to let them know that honey bees play that important role in pollination. In many areas farmer-oriented newspapers exist. Get in touch with those early (note made on Time Line) so that a reporter can cover the meeting.

Sometimes a reporter is not available for some of the local newspapers or farmer papers. Can someone in your association write a good article and submit it either just before or immediately after your meeting? A few photos will help but avoid a seated audience – get some action!

Another item, frequently forgotten, in your promotion is information on the meeting area that you can obtain from the local tourist bureau. So often I have received a lovely brochure at the meeting and discovered something I would really like to have visited. However my plans have been made and staying an extra day at that late notice isn't usually possible. I could have come a day early if I had known ahead of time. So put "contact local tourist bureau" quite a few months ahead of time on your Time Line. Then you can get that information into your general meeting promotion.

It looks like your meeting plans are progressing well. However, it would be a good idea to look into some other items that need attention and a spot on the Time Line.

Door prizes are almost an expected event at meetings, large or small. Door prizes can be a way to get attendees back into the room after a break or lunch. Surely someone in your association can organize obtaining door prizes and taking care of them during the meeting. However, you must put Door Prizes on your Time Line early enough so that your helper can contact the beekeeping suppliers and any local merchants and have the items delivered. Two months before the meeting would be ideal. I recommend a team of helpers at the time door prizes are given out so that the prizes are taken to the winners by "runners." A real drag on a meeting is drawing a winning number, then waiting for the winner to trek up to the front, receive, or worse choose a prize. keep your meeting moving, and everybody's attention, by drawing and delivering prizes fast, fast, fast! If a particularly special door prize is to be donated a notice can be put into your meeting announcements.

A nice touch is what I call a "Goodies Bag," given to each person who attends. The bag or envelope can be simple with a program, perhaps a pen or pencil donated by a local business and maybe a flyer advertising area restaurants. Or the bag or envelope can hold beekeeping supply catalogs, magazines, printed pads plus other items donated by local businesses or supply companies.

Please put "print up program" on your Time Line,

Continued on Next Page



a good public minded representative of the beekeeping community, answer. While removing the swarm somebody, somewhere gets stung. Who's at fault? Guess. As paranoid as it sounds, the safest thing is to not answer the phone.

I don't know the rules about killing a swarm where you live. Maybe you can't. If not, I'd let them be. If you can, and there's a chance the removal will cause a problem, I'd consider playing it safe and soak it in soapy water.

Smokers, open gates, bee poop and swarms. This year don't be stupid, and do be careful.

I want to tell you a bit about Jim Thompson. About a decade ago Jim came to the Root Company to fill the Bee Supply Manager's position after the untimely passing of our then manager, Ellie Failor.

After being in the service as an airplane mechanic Jim graduated from Iowa State University and ended up teaching in the Wooster, Ohio school system.

During his tenure there he became a sideline beekeeper and got involved in the Ohio State Beekeeper's Association, serving in a variety of offices including Director, Secretary and President. He shares my passion for preserving our history and managed to restore the years of lost records of that group while Secretary. We have, now, a wonderful collection of newsletters, minutes and all the rest of what we were for posterity to study.

He's also a collector on his own, and has amassed a collection of bee books, tools and even machinery telling of our past that rivals any I've seen.

During this time he also taught hundreds, probably thousands of beekeepers the art and the science of our craft at county, state and regional meetings. He is an Eastern Apicultural Society Master Beekeeper, a well-known honey show judge, and an all around pretty good beekeeper. He also spent a great many Summers while a teacher working as a county inspector, teaching and helping and making better a whole group of beekeepers

in his county.

He came to the Root Company after completing a full career as a teacher. It was an opportunity to serve again his favorite industry and he couldn't resist.

During his stay here he managed our bee supply line, watching inventory, assembling and packaging supplies, handling how-to calls and, for a time, taking care of the outlet store that sold both candles and bee supplies.

When that changed, Jim came to our department. He still took care of bee supplies, but took on the responsibility of working with the people who advertise in our magazine, taking subscription and book orders, and making sure they all got filled and mailed correctly.

But when it became evident that the bee supply business needed to grow to survive or move on, the powers here chose to focus on publications and candles, and the bee supply business became a part of our past.

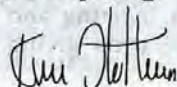
And, though he didn't mind the candles and the books and the phone calls, bee supplies was why he came, and when they were gone, it was time to change course - to spend time with grandchildren, family and other interests.

Jim has been a sounding board for a thousand of my crazy ideas, answered a million questions, and always, always kept bees, beekeepers and beekeeping the most important thing every day he was here. One project was especially important. He and Dave Heilman put together the standard for equipment dimensions a few years back. This still stands as THE Bible of what fits with what.

And speaking of Dave Heilman, who is Dr. Tew's right hand at the Bee Lab, Jim has for years been involved in the workings of the lab in Wooster, lending a hand, advice and support.

Lots of us will miss Jim, though I suppose his family will be glad he's around more. But beekeeping - the bee businesses he helped, the beekeepers he advised, the company he worked for - will be a bit diminished for his retiring.

Thanks Jim. For everything.



fairly close to the meeting date but still leaving you enough time to take care of last-minute items.

A one-day program will fit on a half sheet of paper (5½" x 8½"). A multiple-day program can be a bit fancier, even having ads from vendors and other beekeeping suppliers.

Can you please find someone to take care of vendors? Someone who will contact possible vendors to see if they need tables and how many. Then the vendor helper needs to be certain the tables are in place, and perhaps labeled, soon enough for the vendor to set up before the attendees arrive. The vendor helper can find out whether the venue will be open the afternoon or evening before the meeting or only on the meeting day and notify the vendors. Thus, the vendors will have an idea of when they can set up their display. Vendors add much interest to a meeting, and are also a source of door prizes and auction items. Treat them well and they will return. Don't, and they won't.

Your Time Line now is probably many sheets of paper, taped together and stretching across your living room floor. The Time Line should have given you a nicely-paced approach to creating your meeting, whether large or small. But just think! As you accomplish tasks you can remove pages until you are down to the last few, those for the meeting day. Do not discard those pages - you'll need the plan, perhaps modified a bit, for your next meeting. Believe me, the second time around is much easier!

Good luck! And send me a notice about your meeting. I'd like to attend. **BC**

Ann Harman is planning a meeting right now from her home in Flint Hill, VA.



? DO YOU KNOW ?

Genetics

Clarence Collison
Mississippi State University

Visiting central Pennsylvania during the first week of January and experiencing temperatures below zero quickly reminded me how physiologically complex the honey bee society is, since they remain active throughout the year. Most insects survive the Winter by going into diapause (state of hibernation or a period of arrested development), remaining inactive until Spring arrives. Not only does the honey bee society remain active, and control the temperature within the Winter cluster, they even initiate brood rearing early in January. In contrast, the Africanized honey bee evolved under a completely different set of harsh conditions in Africa. To understand how honey bees are able to survive under severe conditions, one

has to understand bee physiology, behavior and bee genetics. Our efforts to understand bee genetics was just recently enhanced by the announcement that a draft version of the honey bee genome has been made available to the public by the Baylor College of Medicine in Houston, TX. The impressive array of traits and flexibility in behavior patterns of honey bees are due to their genetic variability. This enables colonies to exploit and survive in wide ecological ranges, endure extreme climatic conditions and resist pests and diseases.

Take a few minutes to answer these questions to see how familiar you are with these important topics.

The first 13 questions are true or false. Place a T in front of the statement if entirely true and F if any part of the statement is incorrect. (Each question is worth 1 point).

- ___ Queens and workers have the same number of chromosomes.
- ___ The hatching of honey bee eggs within a colony is a function of the temperature of the brood nest and the genetic make-up of the population.
- ___ Unfertilized eggs hatch faster than fertilized eggs laid by the same queen.
- ___ Sex in honey bees is determined by a single gene with different alleles.
- ___ Eggs with two identical sex alleles have a lethal condition.
- ___ The bees in the Winter cluster that are responsible for producing heat are found on the exterior surface of the cluster.
- ___ The majority of the sperm stored within the queen's spermatheca following mating are primarily from the last drone she mated with before returning to the hive.
- ___ All of the sperm that one drone produces contain identical genomes.
- ___ Africanized honey bees become foragers at an earlier age than workers of European descent.
- ___ One mechanism that results in the production of gynandromorphs is more than one sperm penetrates the egg.
- ___ Interaction of an individual's genes affects their behavior.
- ___ Drones from an inbred queen are inferior to those from an outcrossed queen.
- ___ Honey bees have a haplo-diploid reproductive system.

(Multiple Choice Questions, 1 point each)

- ___ Both bumble bees and honey bees live in societies, however, bumble bees do not have perennial colonies like honey bees and survive the Winters as:

- Pupae
- Eggs
- Mated adult queens
- Diapausing larvae
- Prepupae

- ___ Thelytoky is found within:

- Apis mellifera carnica*
- Apis mellifera mellifera*
- Apis mellifera capensis*
- Apis mellifera ligustica*
- Apis mellifera scutellata*

Please match the following terms with the correct situation.

- Polandry
- Thelytoky
- Gamete
- Alleles
- Arrhenotoky
- Gene
- Gynandromorphs
- Chromosomes
- Meiosis
- Deoxyribonucleic Acid (DNA)

- ___ The production of female workers from unfertilized eggs.
- ___ Individual bees that are part drone and part worker.
- ___ The production of drones from unfertilized eggs.
- ___ A male or female mature reproductive cell; sperm and egg.
- ___ Multiple forms of a gene at a particular site (locus) on the chromosome.
- ___ Queens mating with a multiple number of drones.
- ___ Type of cell division in which there is a reduction of chromosomes to the haploid number during egg and sperm formation.
- ___ A unit of inheritance located at a specific location on a chromosome.
- ___ A complex molecule that transmits hereditary information and controls cellular activities.
- ___ The structures in a cell nucleus that carry the genes.

ANSWERS ON NEXT PAGE

?Do You Know? Answers

1. **True** Female honey bees, workers and queens, normally develop from a fertilized egg, thus they receive a set of chromosomes(16) from the queen (egg) and a set of chromosomes(16) from the drone (sperm). Thus female bees are diploid since they have two sets of paired chromosomes or two genomes.
2. **True** Egg hatching is a function of the temperature of the brood nest and the genetic make-up of the population. European honey bee eggs hatch on average in 72-76 hours in comparison to the Africanized honey bee egg in an average of 70-71 hours at a temperature of 94.6°F. Temperatures lower than normal brood nest temperatures result in reduced egg hatch. Temperatures below 85.6°F will result in less than 1% of the eggs hatching.
3. **False** Unfertilized honey bee eggs destined to become drones take approximately three hours longer from the time they are laid until they hatch in comparison to fertilized eggs.
4. **True** Sex in honey bees is determined by a single gene with many different alleles. Normal females have two different sex alleles (heterozygous), while drones have only one. Homozygous individuals, having two identical sex alleles, develop into diploid males. There are an estimated six to 19 sex alleles in honey bee populations.
5. **True** A problem arises when two identical sex alleles align (homozygous). This is a lethal condition resulting in a diploid drone. Workers recognize and remove the homozygous larvae soon after egg hatch. The empty cells create a spotty brood pattern.
6. **False** Bees in the center of the Winter cluster are responsible for generating heat. The fuel for heat production in the Winter cluster is honey. Honey is converted into heat by metabolic processes of bees inside the cluster. The amount of heat generated is equal to the heat radiated from the cluster surface. Bees on the surface of the cluster serve as insulators forming a shell.
7. **False** Honey bee queens mate on the average with between seven and 17 different drones. Each drone deposits between 6-10 million spermatozoa into the oviducts of the queen. Queens return to the hive after the mating flight where a total of four to seven million sperm within the oviducts migrate by active processes into the spermatheca (the sperm storage organ). The sperm that enter the spermatheca are fairly well mixed, representative of most of the drones that she mated with.
8. **True** All of the sperm one drone produces contain identical genomes that are derived from the egg produced by the queen because drones hatch from unfertilized eggs. The queen is, therefore, the originator of all honey bee genomes.
9. **True** Worker honey bees change their behavior as they age, a phenomenon known as age polyethism. At different stages in their lives they perform different sets of tasks. Research has shown that different lines of honey bees show genetic variability for age polyethism. Africanized honey bees become foragers at an earlier age than bees of European descent.
10. **True** Research has shown that there are more than one mechanism that can result in the development of gynandromorphic bees (individual bees that are part drone and part worker). The primary mechanism leading to gynandromorphs is the result of polyspermy (more than one sperm penetrates the egg). The fertilized egg nucleus leads to the production of female tissue and the accessory sperm nucleus is responsible for the production of male tissues.
11. **True** The interaction of an individual's genes affects their behavior. Most traits are quantitative; controlled by many genes, each having an effect. Groups of genes can influence a single trait with varying degrees of dominance. Specific behaviors can be dominated, masked or modified.
12. **True** Drones from an inbred queen are inferior to those from an outcrossed queen. They live shorter lives and produce less sperm than those from outcrossed queens.
13. **True** Honey bees have a haplo-diploid reproductive system. Drones develop from unfertilized eggs and have one set of chromosomes. Females, workers and queens, develop from fertilized eggs and have two sets of chromosomes.
14. C) Mated adult queens
15. C) *Apis mellifera capensis*
16. B) Thelytoky
17. G) Gynandromorphs
18. E) Arrhenotoky
19. C) Gamete
20. D) Alleles
21. A) Polandry
22. I) Meiosis
23. F) Gene
24. J) Deoxyribonucleic Acid (DNA)
25. H) Chromosomes

There 25 points in the test this month. Check to see how well you did. If you scored less than 12, do not be discouraged. Keep reading and studying

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

CARNIOLAN, ITALIAN, RUSSIAN & SMR QUEENS

Excellent Honey Producing

Fumidil-B fed colonies and nucs • February to May shipments
Airmail postpaid – Live delivery and prompt service guaranteed

Now booking orders for 2004. Call or write for prices.

Terms: 10% deposit with order. Balance due 2 weeks before shipping.

PACKAGE BEES AND NUCS WILL BE DELIVERED TO MI AND WI IN APRIL.

HONEY LAND FARMS

Garry Oreskovic



FL 352.429.3996, WI 920.528.1526, Cell 262.689.1000 • Fax 920.528.1308 •
22146 O'Brien Rd., Howey In The Hills, FL 34737 • email: honeylandfarms@aol.com
www.honeyland.com

GLEANINGS

MARCH, 2004 • ALL THE NEWS THAT FITS

QUEEN IMPORTS UNLIKELY

Canadian government bureaucracy is likely to prevent the import of queen bees from the mainland United States in time for the coming season.

The Canadian industry has agreed to accept the opening of the border to queens for the first time since 1987 if measures are in place to guard against unwanted diseases and parasites.

But for this to happen federal regulations have to be changed to revoke the ban on honeybees from the continental U.S. The change would allow queens to be imported through entry permits but would continue the ban on U.S. packaged bees.

Canadian beekeepers now import queens from Hawaii,

Australia or New Zealand.

The Canadian Food Inspection Agency said it has run into a problem in keeping track of the queens after they arrive in Canada.

The federal government will need information-sharing agreements with the provinces before this data can be given to provincial officials.

The food agency is still waiting to hear from all of the provinces on whether Ottawa should proceed with the changes to the regulations before an information-sharing agreement with the provinces in place.

The delay has angered many beekeepers who say Canada has a shortfall of about 100,000 queen bees a year. —Alan Harman

NEW MANAGER AT BETTERBEE, INC.

Betterbee Inc. announces that there is a new manager on board at Betterbee Inc. He is Shane Gebauer from Augusta, NJ. Shane is a hobby beekeeper with a farming background and a Masters Degree in Ecology & Environmental Science from the University of Maine. He has worked in retail management and environmental management. His most recent job was as a

staff ecologist assessing natural environments for The Nature Conservancy. Bob Stevens, president of Betterbee states: "We believe that, in Betterbee's 25th year of serving the beekeeping industry, the addition of a young dynamic manager with a scientific background to our team will energize us all." Shane can be reached at shane@betterbee.com

ELLINGSON, WEAVER TO LEAD ABF

David Ellingson was elected president of the American Beekeeping Federation at its January convention. A commercial beekeeper headquartered in Ortonville, MN, also operating in Texas and California, he had been vice president. He also operates DDD Wax Rendering in Odessa, MN.

Elected vice president was Danny Weaver of Navasota, TX, where he breeds queens and pack-

age bees as B. Weaver Apiaries. He also has honey production operations in North Dakota and Montana. Mr. Weaver had been a member of the ABF Board of Directors and Research Committee chairman.

Crowned 2004 American Honey Queen was Kristen Miller of Freedom, PA. Kelsey Limerick of Lakeville, IN is the 2004 American Honey Princess.

CURSE IS SALVATION

Victoria beekeepers are using one of southeastern Australia's worst weed pests to help them recover from the long drought.

Apiarists in the state's northeast said rain had resulted in the rapid spread of Paterson's Curse and this has helped them rebuild their colonies.

Most farmers spend considerable time and money trying to control the weed. But Victoria Apiarists Association spokesman Elwyn Papworth told

ABC Radio that for beekeepers Paterson's Curse has been a salvation.

"What weeds are to farmers, a nuisance, to the beekeeping industry they are very valuable," she said. "They are a variety of pollen for the bees themselves to enable the colony of bees to expand — and the queen to lay out more eggs and that gives a greater amount of bees in the hive for honey potential during the season." — Alan Harman

Essential Oils May Work

CHALKBROOD CONTROL STUDIES

Researchers seeking ways to control chalkbrood investigated the antifungal effectiveness of more than 50 natural products and found a number of essential oils particularly effective at controlling the growth of *Ascosphaera apis* in the lab.

The researchers have proposed a field test system to assess the most active antifungal agents.

Chalkbrood is a highly contagious disease of the honey bee *Apis mellifera* caused by the heterothallic fungus *Ascosphaera apis*.

Researchers Craig Davis and Wendy Ward said while a broad range of chemicals have been used either in hives or in the laboratory to control chalkbrood, no chemicals for the treatment of chalkbrood have been registered for use.

Despite the broad range of experimental work that has been carried out to develop chalkbrood control strategies, there is no specific strategy that has been universally adopted or accepted by beekeepers around the world.

In a report for the Rural Industries Research and Development Corp., in Australia the researchers said a compound for control of chalkbrood should have three characteristics.

First, it must completely control the disease, or more realistically, keep it below the

natural infection rate. Second, the control must be convenient to use, since practices such as applying chemicals and cleaning the bottom boards of colonies every week are not practical for commercial beekeepers with large numbers of colonies.

Third, the control must not be more expensive than the natural loss due to the disease.

The report said the investigation of the more than 50 natural products found citral-containing oils were the most active, with growth inhibition at 250 parts per million.

"These findings need to be progressed to field studies to evaluate product efficacy in the hive and to determine whether residues are a problem with this form of disease control," the report said.

The most active antifungal test agents in the study were Nepalese Lemon Grass oil, Lemon Scented Eucalyptus (*Eucalyptus citrodora*) oil, Lemon Scented Tea Tree (*Leptospermum petersonii*) oil and a particular fraction of a New Zealand Manuka (*Leptospermum scoparium*) oil.

The report said the effective control of chalkbrood would probably require a combination of control strategies. "The fact that *A. apis* is so widespread makes the possibility of its eradication unlikely," it said.

2) THE PUBLIC

When a TV show ran "scare" stories on the antibiotic "nitrofurans," first in imported prawns, and then in imported honey, people took these reports at face value, even though not much was explained about the tests used to detect the contamination. Regardless of the facts, if a story makes TV or a major newspaper, it is a serious problem, even if it is not a major health or technical issue. If the reporters call it a "major scandal" (and they did), then it is.

At least the TV report made it clear that the contamination was limited to honey that was blended with honey imported from Argentina. All in all, the reporting has to be described as more or less "responsible." Rare! It could have been much worse.

3) A SCIENTIST'S 15 MINUTES OF FAME

Even if we don't like the idea of sensational "scare" reporting, we really can't be too hard on the reporters. They did nothing but quote Dr. Geoff Skurray, a Professor of Food Science at the University of Western Sydney, who was both quoted and paraphrased in their Prawn's story:

"Only a minute amount of nitrofurans can cause cancer. We're talking about one part per billion that can cause cancer over a period of time.' The Professor says eating three or four of the contaminated prawns over a period of time could be enough to cause the disease."

But no one asked any other scientist or doctor about his clearly questionable statements. If "3 or 4 prawns" can cause cancer at one part per billion (ppb) of contamination, then what are people to think about a jar of honey contaminated at 0.5 parts per billion?

4) THE PACKER/IMPORTER

Capilano Honey's general manager, Roger Masters, appeared on Australian TV, and said that his company's honey was not contaminated with nitrofurans, only to be contradicted by tests of his company's honey taken from store shelves. Bad move. I hope he has a generous severance package in his employment contract.

He's likely a fatality in this train wreck of public relations errors.

5) THE PACKER/IMPORTER, AGAIN

Even worse, Capilano Honey made threats of legal action against Warren Tyler, the *beekeeper* who told the press about the contamination when AQIS failed to act on his report. A very, very bad move. Suddenly, the situation ratcheted up from "bureaucratic inaction," which is not really news to anyone, to "cover up," which >>is<< news. If not for the legal threats, the story might not have appeared on TV at all.

6) THE APPEARANCE OF "SCIENCE," BUT 100% FACT-FREE

Random samples were taken from store shelves by the reporters, and sent all the way to Germany to be tested. (When you want precision, think Germans in lab coats!) The results came back as 0.5 ppb, 0.7 ppb, 0.9 ppb, 1.4 ppb, and 0.4 ppb. No one ever explained if detection at these levels is reliable or accurate. All tests have limits of detection, and near the limit of detection, one can be reading more "noise" than "data."

7) THE HONEY COUNCIL SUFFERS FROM FOOT-IN-MOUTH

Then, Stephen Ware of the Australian Honey Bee Industry Council got into the act, and said that MOST of the honey tested "fell well within internationally accepted limits," which was nothing but an admission that ALL of the honey had detectable nitrofurans.

8) THE HONEY COUNCIL PAUSES ONLY TO SWITCH FEET

Mr. Ware then rambled on about how one part per billion was the maximum residue limit allowed by the European Union, which may have made some viewers wonder if Australia had joined the European Union while they weren't looking. Clearly, he did not do his homework, did not know of the prawn contamination story, and hence did not address the statements made by the scientist about how dangerous one ppb can be in prawns.

9) THE HONEY COUNCIL PATS THE CITIZENS ON THEIR HEADS AND SAYS, "DON'T WORRY, TRUST US"

But worst of all, Mr. Ware made the classic error of "talking down" to the general public by quoting the "Food Standards Australia/New Zealand" group, who claimed:

"You could eat 70 jars of honey

containing one ppb of nitrofurans every day for the rest of your life without any negative effects."

The problem with statements like this is that they are pure speculation, since long-term effects in medicine are guesses, not tested lab results. People are smart enough to know this. They know that no one has ever actually EATEN that much honey, let alone contaminated honey. Such claims do not calm fears, they just look like more of a cover-up.

10) EVEN THE BEEKEEPER IS NOT WITHOUT SIN

Even Mr. Tyler the beekeeper goofed. He was asked:

"Can you give the Australian public good wholesome honey?" He replied "If it is pure Australian, yes." ...which means that the same TV reporters will promptly send samples of Australian-produced honey to that same lab in Germany, and tell them to keep looking until they find something nasty.

SUMMARY

Spin-doctoring is ONLY for highly-trained and well-prepared pros, skilled in memorizing their statements with care long in advance of being interviewed.

Beekeepers and the "honey industry" don't have any yet. Not anywhere on the planet.

Recalls are far cheaper than negative press. Cut your losses, suit-and-tie crowd! When in doubt, scrap the entire lot from warehouse to retail, and invite the press to watch you do something fun and permanently destructive with it, like feeding it into an incinerator with a large front loader, or imbedding the jars in concrete as a decorative walkway at corporate headquarters "to remind us to be vigilant in the future." You get "good" PR coverage for doing a recall.

You get grand jury indictments for NOT doing a recall. You make the call.

When a honey packer has a law firm threaten a beekeeper over what he has learned and is saying about ANOTHER country's honey, it is time to sit down and rethink priorities. **EC**

James Fischer keeps bees in the mountains of Virginia, and thought that a "Nitro-furan" meant a "very fast bear."

SCIENTISTS TAP BEE GENOME MAP FOR IMPROVED TRAITS

Scientists Tap Bee Genome Map for Improved Traits WASHINGTON, February 3, 2004—Breeding a better honey bee is the goal of U.S. Department of Agriculture scientists who are using recently created genomic data to speed their search for disease resistance and other traits. Scientists with USDA's Agricultural Research Service are exploiting an initial draft of the honey bee genome announced earlier this month by the Baylor College of Medicine and U.S. National Institutes of Health, which co-funded the mapping project with ARS. The scientists' aim is to secure the honey bee's role as the chief insect pollinator of more than 90 different crops, including almonds, blueberries, melons and alfalfa. Determining the position and order of genes residing on the insect's DNA—about one tenth the size of the human genome—provides bee researchers with a shortcut to traits that can otherwise be difficult to identify. "This research puts the honey bee center stage as the first agricultural animal that's been fully sequenced," said Joseph Jen, USDA Undersecretary for Research, Education and Economics. "As an organism whose social order rivals our own in many ways, the honey bee will serve as a natural system for further agricultural studies, including such areas as social behavior, cognition and immune system function." ARS researchers Katherine Aronstein at Weslaco, Texas, and Jay Evans at Beltsville, Md., two co-authors of the proposal to sequence honey

bees, are especially interested in defining the responses of bees to a range of diseases. Their long-term goal is to characterize genes that are key in the honey bee immune response, then use data from these genes to improve both bee breeding and management. ARS also conducts bee research at its Carl Hayden Bee Research Center at Tucson, Ariz., and its Honey Bee Breeding, Genetics and Physiology Research Unit at Baton Rouge, La., which also is involved in studies of the germplasm and genetics of honey bees. Enhanced knowledge of the honey bee genome will be of value to all aspects of the agency's bee research. "Currently, we know of a handful of honey bee genes that are activated in response to disease," said Kevin Hackett, who leads the ARS National Program for Bees and Pollination. "We're also now discovering how the products of these genes are involved with keeping bees healthy." According to Hackett, other possible research avenues include identifying genetic markers to expedite bee breeding efforts, preserving honey bee germplasm and fine-tuning the honey bee's nutrition and pollination effectiveness, such as through genome-driven studies of the bee's sense of smell. More information about the honey bee genome project is available at: http://www.genome.gov/Pages/Research/Sequencing/SeqProposals/HoneyBee_Genome.pdf ARS is USDA's chief in-house scientific research agency.

A STRANGE PLACE TO LOOK

Rainbow Bee-Eater birds can help Australia guard against exotic bee arrivals in the north of the country.

The bee industry had wanted, during an Asian bee incursion in Darwin in 1998, to capture some of the birds and examine their stomach contents but the National Parks and Wildlife Service would not allow this.

Now the result of new research published in the Australian Journal of Entomology has found a non-invasive way of using the birds.

The research by Glen Bellis and Angela Profke found pellets regurgitated by the honey eaters

can be checked for bee wings.

The proportion of pellets containing wings was compared prior to and after placement or removal of honeybee hives in the vicinity of four roosts.

On each occasion, the addition or removal of hives was reflected in proportions of pellets containing wings.

The results suggest the examination of pellets beneath bee-eater roosts would be a useful technique for monitoring the occurrence of feral honey bees.

By examining the wing venation of the forewing the species of bee can be determined.

COLONY ID

NOTICE

**BEE HIVES ON THIS PROPERTY
ARE PERMANENTLY IDENTIFIED WITH**



1-800-336-AVID / 1-909-371-7505

To reduce theft this year, Joe Traynor, a colony broker for pollination in California has added a microchip to colonies to aid in identification.

Registration of Food Facilities

Registration of Food Facility Database Information Verification Since the issuance of the Bioterrorism Act Registration regulation, FDA received more than 180,000 food facility registrations. We appreciate your compliance with this requirement.

To ensure that FDA has received accurate information, within the past several months, we sent a verification notification to each food facility.

This verification notification requested that each food facility review and confirm that it should be registered with FDA. Most of you have responded to this request and we thank you for your cooperation.

We recently discovered an error in our verification process. As a result, verification notifications generated by our system failed to use the optional "preferred mailing address" that some facilities had chosen to include in their registration. We are in the

process of correcting the system so in the future, we will send routine communications only to the preferred mailing address when one has been provided.

For food facilities that provided a preferred mailing address that have recently received but not yet responded to a verification notification, we request that you not respond to this notification. FDA plans to resend the verification notification to your facility's preferred e-mail address or preferred mailing address, if we have no response on file from the prior mailing. We ask that the appropriate contact at the preferred mailing address respond to this future notice.

We apologize for the error and thank you for your cooperation in developing the registration of food facilities database and alert notification system.

If you have questions concerning this process, contact FDA's Help desk 800.216.7331.

WI HONEY QUEEN

Angela Fisher was selected as the 2004 Wisconsin Honey Queen by the WI Honey Producers Association, at their convention in November. Angela is the 19-year-old daughter of Evan and Andrea Fisher of Watertown.

To schedule an appearance with Angela, please contact the Honey Queen Program Chairperson, Anna L. Kettlewell, 414.545.5514. All appearances are free of charge.



2004 Swarms With Italian Queens

1/2# Swarms \$37 ea. (for observation hives)

1-9 Packages

2# Swarms \$44 ea.

3# Swarms \$49 ea.

10 and UP

\$43.00

\$48.00

For package bees with
Russian Hybrid Queens
add \$3.00 per swarm

Clipped Queens, add \$1.00; Marked Queens, add \$1.00

Prices above do not include shipping charges.

PACKAGE BEE PICK UP

We have reserved every Saturday in April and the first two Saturdays in May for package bee pick up at our Clarkson, Kentucky plant. If you would like to avoid the risks involved when bees are shipped through the Postal Service call us. Please place your order early for the Saturday of your choice.

ITALIAN QUEENS

1-9 \$12.50 ea.

10-24 \$11.00 ea.

25-up \$10.75 ea.

Prices include 1st Class shipping
Clipping/Marking - \$1.00 ea.
RUSSIAN HYBRID QUEENS
Add \$3.00 per Queen to these prices.

100% Beeswax Comb Foundation Full line of woodenware products



Plastic Foundation for Hives & Supers
Metal Processing and storing equipment



Protective Clothing:
Jackets, Coveralls,
Hats & Gloves

Visit our web site: www.kelleybees.com

WALTER T. KELLEY COMPANY

MANUFACTURERS OF BEEKEEPING SUPPLIES

807 West Main Street. • P.O. BOX 240 • CLARKSON, KENTUCKY, U.S.A. 42726-0240

Phone: (270) 242-2012 • Fax: (270) 242-4801

Credit Card Orders

Call Toll Free:

1-800-233-2899



Display Advertisers

Bees & Queens

Allen's Bee Ranch	60
Bee Happy Apiaries	62
Bolling Bee Farms	5
Buckeye Bee	34
Calvert Apiaries	Inside Back
Gardner's Apiaries	6
Glenn Apiaries	48
GzBz Honey Farm	11
Hardeman Apiaries	Inside Front
Harper's Honey Farm	36
Harrell & Sons	45
Hawaiian Queen	40
Homan-McMasters	62
Honey Land Farms	55
Indian Summer Honey Farm	36
Jester Bee Company	45
Koehnen, C.F. & Sons	11
Kurkoski Apiaries	7
Lamb's Honey Farm	38
Miksa Honey Farm	40
Olivarez Honey Bees	31
Pendell Apiaries	34
Rossman Apiaries	49
Queen Right Colonies	48
Rufer's	5
Shumans Apiaries	4
Strachan Apiaries	45
Taber's Queens	31

Weaver, R Apiaries	12
Wilbanks Apiaries	Ins. Back
York Bee Co.	Inside Back

Associations/Education

American Honey Producers	7
--------------------------	---

Equipment

CC Pollen	Inside Front
Cowen Mfg.	11
Custom Woodenware	16
Dakota Gunness	62
Golden Bee Products Beesuit	40
Humble Abodes	
Woodenware	14
MDA Nuc Boxes	36
Perma Comb	48
Pierco Frames	45
Propolis Traps	25
Vented Beehive Cover	7

Related Items

Angel Bottles	25
Bee Cool Ventilators	36
Bee Quick	7
Bee Services	45
Branding Irons	31

Golden Heritage Foods	31
Honey B Healthy	20
Mite-Away	7
Observation Hive	36
R. M. Farms	11
Red Bee Candles, etc.	25
Top Entrance Hive	36
Tuttle Apiaries	14
Weaver, B. Apiaries	1

Suppliers

B&B Honey Farm	19
BetterBee	1,12
Betterway Equipment	34
Browning Cut Stock	38
Brushy Mountain	23,44
Dadant	35
Draper's Super Bee	11
Kelley, Walter	63
Mann Lake Supply	Bk Cover
Maxant Ind.	36, Inside Front
Root	3,9
Ross Rounds	6,18,31
Rossman Apiaries	27
Ruhl Bee Supply	40
Sherriff, B.J.	4
Simpson's Bee Supply	11

The story you are about to read is true. The names have not been changed to protect the innocent. No one is innocent. Everyone involved was guilty of at least one major crime.

My name is Saturday. Joe Saturday. I carry a hive tool.

Thursday, 10:14 am My partner and I were working the day watch on the biosecurity desk when a messenger delivered a video tape.

"We've got problems with honey in Australia," he said, tossing the tape onto my desk.

"Not our problem," I said. "Not our beat. Look at a map. No, that's a U.S. map.

Find a globe.

"Way, way out of our jurisdiction" said my partner, awaking from his apparent coma. "Hard to think of a place further from here than there."

"Yes," I said as I picked up the tape, "This case is Guam, but not forgotten.

Here today, gone to Maui."

"But the honey wasn't Australian" said the messenger, "It was imported."

"Australia importing honey?" said my partner "That does sound unusual."

"The Honey was from Argentina." said the messenger

"Sounds like a 147 14.05-c to me" offered my partner "Dumping without a permit."

"Maybe," I said. "What else do you know? Just the facts, man."

"Well," the messenger said, "the antibiotic 'nitrofurantoin' was first found by Australia, first in imported prawns, and then in imported honey."

"Pawns?" interjected my partner "You need the Chess Patrol - this is the Beekeeping SWAT Team."

"Not pawns, PRAWNS," I answered. "Large shrimp."

"Large shrimp?" asked my partner "Should we call in the Oxymeron Squad?"

"Prawns are bigger than jumbo shrimp..." I replied. "...never mind, forget it."

"Let's play the tape."

The tape was a mystery from the start. It was a segment from an Australian TV news program called "Today/Tonight." We thought this was a clue that the program was broadcast from either Antarctica or the North Pole, but we soon realized that some journalists just don't know night from day.

The story ran 20 minutes long. It told a tale that made us all squirm in our seats, made our stomachs turn over, our heads swim, and our eyes cross. The reputation of honey was being slowly roasted and we started to get dizzy from imagining innocent Australian beekeepers slowly turning over the hot coals of "investigative journalism." My partner pulled a tendon from all this physical effort, and left to search the local bars for medication.

"Kid," I said to the messenger "You want to make detective, don't you?"

"Sure" said the kid. "I want to carry a gold-plated hive tool like yours, someday."

"Then pay attention" I said. "The real crime here was not the contaminated honey, but how everyone reacted to the problem."

"You mean they committed a 205-19.6?" asked the kid.

"Bright boy." I said. "Yes, it was multiple counts of 'Willful Disregard Of The Obvious.' A felony in this state.

They will all pay the price for their crimes, but maybe you can learn from this how not to handle a similar situation if it

happens on your beat.

Look at my notes, and pick out the top ten..."

"Like Letterman?" The kid interrupted.

"No, like the FBI Most Wanted List," I said. "This time, a food scare hit Australian honey, but don't worry, it can happen here, and it will happen again. And again."

"You mean like the Mad Cow from Washington State?" asked the kid.

"Yes, just like that." I said. "But my beef with that case was that the cow was Canadian."

"So the beef was 'Grade A,' Eh?" asked the kid, but I saw that one coming. I picked up a book. I threw the book at him.

I sat back with a cold bottle of mineral water and opened up another evidence file while the kid read my notes, re-screened parts of the tape, and typed up the report. He did OK, but he plays with rewind and fast forward too much.

He handed me this:

THE TOP TEN FELONIES LIST

1) THE REGULATORS

When one of the largest beekeepers in the country comes back from a conference, and tells a government agency with "Quarantine" and "Inspection" in its name (AQIS) that honey imported from a certain country was testing as contaminated elsewhere, the agency should not ignore his report. They should get busy doing some inspecting and quarantines. They could at least send a few e-mails and make a few phone calls to verify the beekeeper's report, no matter what they thought of the claim.

Continued on Page 58

**This Story Is
True. Recalls Are
Cheaper Than
Bad Press**

James Fischer