APR 2001

Bee Culture

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

APRIL 2001 VOLUME 129 NUMBER 4

A life size observation hive.
photo by Allen Dick

www.beeculture.com
NEW NAME • SAME GREAT CONTENT!

FEATURES

DEPARTMENTS & COLUMNS

Subscription Information

U.S., one year, $20; two years, $38. Newsstand price: $2.50. All other countries, (U.S. Currency only), $10.00 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), April 2001, Volume 129, Issue 4, is published monthly by The A.I. Root 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

Bee Culture is Printed on Recycled Paper

Publisher – John Root, Editor – Kim Flottum,
Production Coordinator – Kathy Summers,
Circulation & Advertising – Dawn Feagan,
Publications Sales – Jim Thompson

Contributors
Richard Taylor • Mark Winston • Clarence Collison
Ann Harman • James E. Tew • Malcolm T. Sanford

KEEP IN TOUCH

Write: Editor, 623 W. Liberty St., Medina, OH 44256
FAX: 330-725-5624
EMAIL: KIM@AIROOT.COM

MAILBOX

Real Beekeepers?

I think Richard Taylor is too hard on small beekeepers (*Bee Talk*, February 2001). While I am sure many eager beginners drop out for the reasons he lists, the attitude revealed in his article is responsible for some terminal disappointments, too.

As a garden writer, I suppose I qualify as what he calls a naturalist. It's next to impossible to become deeply involved with horticulture without noticing the effect of pollinators, along with all the other insect species that visit gardens. I'm interested in the "life story" of the critters I see on and around plants, and once I learned about the social structure of honey bees I was hooked.

I have kept a maximum of four hives for over 10 years now. Sure, I lost a couple of colonies to mites, but I learned from that disappointment. It didn't stop my buying replacement packages and then taking care to medicate appropriately.

The biggest obstacle I have faced is the attitude that if you keep just a few hives, then clearly you are not a *real* beekeeper. It is almost a macho sort of thing – unless you have a hundred or so hives, you aren't to be taken seriously. I found this attitude at a beekeeping course I attended, given by a notable university. In the class were representatives of a local (well, 80 miles away) beekeepers' club, who spent the whole class trying to demonstrate that they knew more than the lecturer, and sneering at "stupid" questions asked by true beginners like me. I had kept a couple of hives for a few years then, and what I needed was some help with the real nitty-gritty. But all I got from that class was an expensive textbook.

I don't want 100 hives, nor 50, nor even 20. I have to earn a living, and there simply aren't enough hours in the day for me to care for more than a few hives. I'm not in it for money, clearly, and I am more than happy with the ample supply of honey I get. I use it, sell some, give it as presents, make mead, and am content. So what's wrong with that?

Even so, it would be great if I could get some real hands-on help from an experienced beekeeper. Sneer if you like, but I still have a heck of a time finding the queen. It was a real breakthrough when I felt confident enough to stop wearing gloves. I'm still not absolutely sure about drone cells and queen cells, and I am learning slowly to recognize all the signs of a healthy queen at work. Like the rest of my beekeeping knowledge, this comes from observation, trial and error, book-learning (and video-watching), and snippets gleaned from this magazine.

The disappointment of losing colonies might have nudged me out of beekeeping, but didn't. Getting stung pretty badly, because of my own clumsiness, might have, but didn't. What has pushed me closer than anything else toward giving up my bees was the dismal realization that I can expect no hands-on help from "real" beekeepers because, they clearly believe that if you keep only a few colonies you are not to be taken seriously.

The bees, however, are endlessly patient and forgiving. I do the best I can for them, and they don't seem to care that I am not a "real" beekeeper.

Peter Garnham
Amagansett, NY

Editor's Note: *Richard's article was intended more for those beekeepers who burn white-hot in the beginning, but for the reasons stated soon lose their zeal, their interest. This is often noted in associations. Perhaps too often. But you bring up an equally important point, and that is the arrogance sometimes displayed at these same meetings by experienced beekeepers. That people become interested, and then move on, in any area is not uncommon. But demeaning behavior by veterans is unconscionable.*

High Quality Queens?

I laud what you said about queens and queen producers. Queen quality has received little attention but it is, as you know, central to beekeeping. Your emphasis on queens will, I hope, lead to the availability of better queens.

I have, over the years, had some very good queens from queen breeders, as well as some mediocre ones. The best queens I ever bought were the Mraz queens that used to be available from a number of breeders. I don't know what ever happened to that stock, but I hope someone somewhere has maintained it. Charles Mraz obviously knew what he was doing when he developed those queens. I just wish they were still for sale from some source. Those queens showed me just how good a good queen can be. Other queens were generally not much better than those I raised myself. I know there are still some good queens somewhere, but at present prices it is rather expensive to try to find them. I hope producers of superior queens get the attention they deserve.

Richard Dalby
Levan, UT

Bees *for* Development

We would like to respond, a little late in the day, to Leland Larson's letter in *Bee Culture* last year.

Leland was asking whether there is a philanthropic organization in the U.S. concerned with beekeeping in developing countries.

While **Bees** *for* **Development** is based in the UK, in these days of e-mail and excellent communication, we feel ourselves to be a

Continued on Next Page

MAILBOX

truly international organization: the UK is just where our office sits!

For those of your readers who have not heard of us, **Bees** *for* **Development** works to provide information to beekeepers in over 130 countries. We answer inquiries from developing countries free of charge, and help keep beekeepers well informed by means of our journal *Beekeeping & Development.*

We receive support from, and indeed depend upon, beekeepers and associations around the globe. If you would like to subscribe to the quarterly journal *Beekeeping & Development*, or know more about our work, please contact us at this address: **Bees** *for* **Development,** Troy, Monmouth, NP25 4AB, United Kingdom, FAX +44 (0)16007 16167 Ph. +44 (0)16007 13648, email: busy@planbee.org.uk, Website www.planbee.org.uk

Nicola Bradbear
Bees for ***Development***

Nicola Bradbear will be bringing bees for development to both EAS and WAS this Summer.

Thank You Richard

I have to take a moment or two to comment on Richard Taylor's article in the February *Bee Culture.*

First, I would like to say that much of what Richard says is very true. I too, have seen the comets come and then burn out. I often wish there were more comets, but the ones that do come are appreciated. I teach beekeeping as often as I can and yet there are years when it seems like a bit of a chore rather than the real joy it should be. Too true Richard that not many of us will become rich keeping bees but then again those of us that keep bees are enriched.

Mostly I would like to take a few moments to thank Richard for all those articles he wrote over all those years and to tell him I miss his monthly contributions to your magazine. I read Richard's words faithfully every month and still go back occasionally and re-read them. Richard's words inspired me to be a better beekeeper and picked up my spirits when I made mistakes by admitting we all make mistakes.

I found Richard Taylor as a good down to earth writer that had one of the best ways of getting his information to the readers. Thanks again, to *Bee Culture* and to Richard for his wisdom.

Rickie Cooper
Bowdoinham, ME

What Kind of Queen?

Every year starting with my January and February issues, I start thinking about what, when and where to order the things I need for my bee business for the new year.

I am a commercial pollinator and sell nucleus colonies every Spring. And I order my queens early to have my nucs ready for sale by the first of May. Every year it makes me mad to look through my *Bee Culture* magazine and notice most breeders of queens and packages won't list in their

ads the breed of bees they sell or the price. Looking in January 2001 I noticed that only six out of 23 companies gave types of bees and prices both. The other 17 only listed type or price, not both, or nothing at all. Are they ashamed of the product they sell and prices? To check things out further I pulled at random May '97 issue and in the main part of Spring season, 17 companies still didn't give all or any information – *Call For Information.*

If I go to the store for an item and upon picking it up, see no price. I go elsewhere for it.

Jerry Shuman Apiaries has sent me a price list every year around January since I first bought queens from them in small orders. They have a good product, service and prices.

John Isenhower
Seaford, DE

What's In A Cell?

Some of the possible symptoms of disease which Nicholas Calderone described (January, 2001) are found so frequently in non-diseased hives that I think it is a disservice to include them. As everyone knows, in any one cell there is a succession of eggs, uncapped brood, capped brood and empty. For a brief time, there is even the state of partially capped brood as the cell is in the process of being capped. Some cells in the middle of a frame sometimes contain nectar, honey or pollen. When those stores are finally consumed and become empty, the queen is likely to lay eggs in them. Should the surrounding cells contain capped brood at that time, this cell will "forever" be out of step with its neighbors, being capped when they are uncapped and vice versa. This situation is almost sure to occur when frames are moved around in the hive or between hives. I would hazard the guess that for every time these observations are the symptoms of disease, thousands, even tens of thousands, of times they are not. Beekeepers will drive themselves and their friends crazy if they make a serious investigation of every one of them. Focussing on the other symptoms Nicholas describes will turn out to be adequate for diligent diagnosis.

Dan Hendricks
Mercer Island, WA

Dear Wendy's

Beekeeping has become a great challenge in New Jersey during recent years. Hordes of parasites are killing thousands of bee colonies, honey prices are depressed while costs are up, and farmland is being developed at an ever increasing rate, resulting in lost honey bee forage areas.

People and agriculture are pressed ever tighter in the 'Garden State. Housing, commercial space, shopping malls, and farms are clustered together, becoming a common site. This trend is not limited to New Jersey but appears in many areas of our country.

This is why I was so disturbed to view your latest TV commercial. While we applaud your use of a bee product, I was bothered by the sight of you, dressed in a beesuit, running amuck while being chased by a swarm of "angry" honey bees. Our organization has spent countless man-hours at schools, clubs, stores, fairs, and shows educating the public about honey bees and beekeeping. These hours are gladly donated by both hobbyist and commercial beekeepers. These years of education were set aback tremendously in the scant 30 seconds it took to air your latest message.

With honey bees and people in such close proximity in New Jersey, it is extremely important that our state insect have the beneficial, gentle image this important pollinator deserves. We are constantly defending our trade against misinformed officials and irate citizens who only visualize the angry, aggressive bee portrayed in your ad.

We respectfully ask for and need your help. We request that the ad be discontinued. We also solicit your help to undo the damage your ad had on our education effort. We await your reply.

Dan Kurela, Vice President
NJ Beekeepers Association

INNER COVER

Every year, sometimes in February, sometimes March the *light* changes. More than, it's finally not pitch black when you get the morning paper. Not coming home in the dark isn't it either. But both serve to put you on notice.

Winter light is like a single too-small light bulb in a too-big gymnasium. Not enough to read by, but enough to keep you from tripping over the ruts in the road. It makes you want to turn your collar to the wind and the damp and hurry along. Winter light, no matter where you are, is cold and dark and hard.

Which is why the change is so easy to take. One day the *light* outside is warm. Soft and easy, with a glow like embers in the fire. But because the air is as cold as yesterday it's a moment before you notice.

But if you're careful you'll not only feel the light, you can even hear the difference. Hard Winter light puts an edge on things cars going by, branches in the wind, foot steps on cold gravel. This new light makes you, let's you think it's warmer out, but it's not it's just as cold as it was. But really, the light has changed, the warm, gentle light of Spring.

•

Have you ever read warning stickers on the top of a step ladder? "DO NOT STEP" Or the one on lawn mowers about not sticking your hand under the machine while it's still running. These warnings are on everything. Take a look. If you're stupid enough to do it, there's a warning sign telling you not to. In most cases there's no law that says that warning sign *has* to be there. You can't legislate stupidity. But when somebody standing on the top step of a step ladder, on one foot, trying to reach the far corner of the ceiling with a paint brush takes a swan dive through the picture window and ends up bloody and broken, you can absolutely bet he'll say, "Well, it didn't say not to" And if it doesn't, if that warning sign wasn't posted on the top step, in neon orange letters six inches tall another absolutely sure bet is that the manufacturers and the seller of that step ladder will get sued. If it was, though, in neon orange letters six inches tall you can be pretty sure the lawsuit won't go anywhere.

And, believe it or not, there's an organization that goes around making up those warning signs. They decide how big the letters are, what color they are, where they go and what they'll say. And then they promote these safety signs, and protect them with copyrights, so that they are standardized, uniform and consistent from, well, one step ladder to another.

That way, when our swan diver sues, the court can ask if there was the ASTM safety sticker in place. If yes, the court can then say, "Well, stupid, didn't you see and read the sticker?" And, even if our diver didn't see and didn't read the sticker, the manufacturer and the seller have gone to accepted limits of warning to keep people from doing stupid things with their products.

Well, ASTM (American Society of Testing and Materials) has brought stupidity to candles.

Instructions for exact placement can be purchased from ASTM for $25. This gives you the right to use the warning label. Call them at 610.832.9500, or www.ASTM.org.

The instructions for designing and placement of this warning label are two pages long. They dictate font, label size, color and placement, just like the step ladder warning. The instructions tell a candle user to keep a burning candle in sight, keep a burning candle away from children and pets, and don't put a burning candle on, or even near anything that can catch fire. Just like the lawn mower warning – don't be stupid.

The upside is that when someone falls asleep with a romantic candle burning on the nightstand and a fire starts, the court can ask "Didn't you read the warning label?" And if it was there, the court can say you were stupid and make you go away.

However, if the label wasn't there and the same thing happens, what does the court do? Like the step ladder and lawn mower, if the manufacturers and the sellers don't do everything reasonable to keep people from doing stupid things, they may have a problem.

Now. Do you sell candles? To stores? To stupid people? Probably. Do you need a warning label? Do you need the ASTM warning label?

The ASTM label is a "nationally recognized requirement for the cautionary information to be placed on candle units for sale, including the requirements as to labels that retailers and distributors shall follow." The goal, of course, is to help prevent fires, certainly a worthwhile cause.

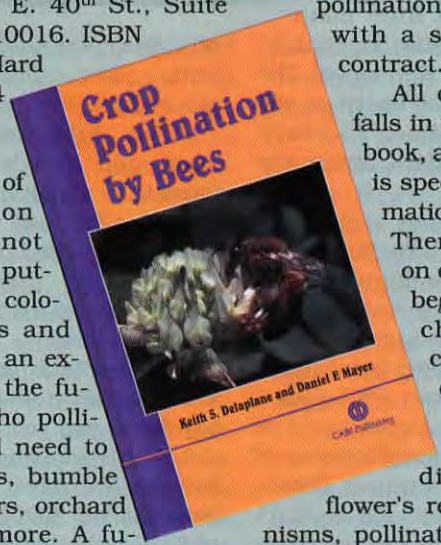
Most of us are small businesses when it comes to making and selling candles. And we don't have deep pockets. But to ignore this would be foolish, I think. And to purchase the rights to use the ASTM copyrighted label isn't terribly expensive. A prudent course of action then would be to first, use the approved label. Second, provide a warn-

Continued on Page 48

Guiding Lights
711

Take A Look At What's New

Crop Pollination By Bees. Keith Delaplane & Daniel Meyer. CABI Publishing, 10 E. 40th St., Suite 3203, NY, NY 10016. ISBN 0851994482. Hard cover. B&W. 344 pages. $100.



The future of crop pollination business will not merely include putting honey bee colonies on trucks and taking them to an existing crop. In the future, people who pollinate crops will need to use honey bees, bumble bees, leaf cutters, orchard masons, and more. A future pollinator will have to have a smorgasbord of insect pollinators at the ready, to match perfectly the crop to pollinate.

Too, this future pollinator will need to be well versed in the pollination requirements of any of the crops to be pollinated. Bee biology and management, and crop biology and management.

Since McGregor no single book has made a study of the pollination requirements in as great a detail as this book does. (Free's last edition was too bogged down in detail to be useful.) And only a few have touched on using bees other than honey bees as a managed crop pollinator. You can probably figure out how to raise bumble bees and many others as well using this book.

Valuable too, is the information on conserving wild bees, which, if you are relying more on wild than managed bees is important.

Chapters on honey bee biology, colony management and even specifics on colony management for pollination are included, along with a sample pollination contract.

All of this information falls in the front half of the book, and if what you want is specific crop/bee information, turn to page 133. There the information on each of the 41 crops begins. Each crop is a chapter, which includes information on flowering, pollination requirements, photos and diagrams of the flower's reproductive mechanisms, pollinators, and, for other crops even more (see below). Each chapter contains a listing of the various bee densities recommended for the crop (colonies/acre), with a literature average, and, a measure of bees/flower needed if that information has been published.

Some chapters, such as apple, contain bloom periods, pollenizers, pollen compatibility charts, orchard designs and cross pollination requirements.

Of course some crops have very extensive data, and others very little. All have as much as is known. Appendixes list book and supply sources for equipment, bees and wild bee equipment, the contract mentioned, a pesticide/bee (honey, alfalfa, alkali) toxicity table and references.

It is a shame that the publisher of this exceptional book requires the equally exceptional price for sale. Surely this will limit the audience it will reach.

Super Cracker

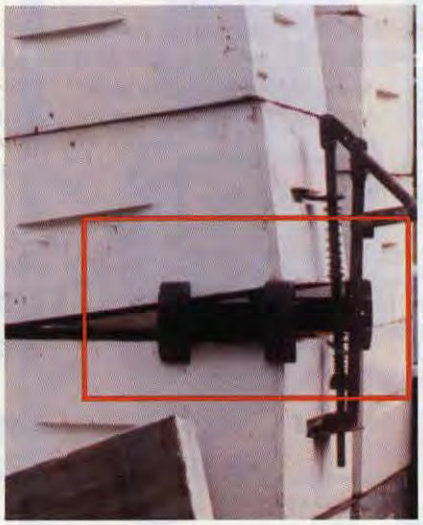
The bottom plate of the Super Cracker is inserted in the handle below the super you wish to remove and the adjustable upper plate goes into the handle of the super above.

The spring-loaded lever is pulled down, locked and the spacers inserted.

Super Cracker is removed leaving spacers in place and the bee escape placed into the spacers. The stack of honey supers can easily be tipped forward allowing the bee escape to be pushed all the way in.

Put the Super Cracker back in place and remove the spacers.

This simple tool allows for one person to easily remove their honey without using chemicals. There should be no holes above the bee escape. On site repairs can be done using clear boxing tape. Bee escapes work best when there is no brood in the honey supers. One person should be able to average less than a minute per colony to completely bee escape a beeyard.



Continued on Next Page

NEW PRODUCTS ... Cont. From Pg. 9

Beekeepers can now get help from their computers when a dreaded pest, *Varroa* mite, shows up in their hives. New software called "VarroaPop" – short for "*Varroa* populations" – gives U.S. beekeepers a science-based estimate of how fast the mite population in a beehive, or colony, might grow.

The *Varroa* mite, *Varroa jacobsoni*, is regarded as the single worst pest of honey bees in the United States.

Beekeepers can use the computer-generated estimates in deciding whether to spend money to treat hives with mite-killing chemicals. VarroaPop also helps them decide whether weak, underpopulated hives are doomed—and best discarded—or whether a better option would be to combine the struggling hives with larger, stronger colonies that might be able to withstand mite attack.

Agricultural Research Service research entomologist Gloria DeGrandi-Hoffman at Tucson, Ariz., and colleague Robert J. Curry of the University of Arizona-Tucson, developed the software.

To get an estimate of the future size of a mite population, beekeepers input a few simple details, such as the number of mites that they captured when they took a quick sample of their hives.

Available for downloading from the Internet, VarroaPop is the first publicly available software program that beekeepers can use to predict the mite's impact and to manage their hives accordingly. The estimates are derived from mathematical equations that DeGrandi-Hoffman and Curry developed. The equations, in turn, are based on the researchers' analysis of 25 years' worth of scientific data about the mite.

DeGrandi-Hoffman and Curry are now updating VarroaPop to incorporate suggestions from some of the more than 300 beekeepers and others who have already downloaded and tested it. VarroaPop is available at: http://gears.tucson.ars.ag.gov

ARS is the U.S. Department of Agriculture's chief scientific research agency. Scientific contact: Gloria DeGrandi-Hoffman, ARS Carl Hayden Bee Research Center, Tucson, Ariz.; phone (520) 670-6380, ext. 105, fax (530) 670-6493, gdhoff@aol.com.

This item is one of the news releases and story leads that ARS Information distributes on weekdays to fax and e-mail subscribers. You can also get the latest ARS news on the World Wide Web at www ars.usda gov/is/pr/thelatest.htm.

* Feedback and questions to ARS News Service via e-mail: isnv@ars-grin.gov.

* ARS Information Staff, 5601 Sunnyside Ave., Room 1-2251, Beltsville MD 20705-5128, (301) 504-1617 fax (301) 504-1648.

What's in a name? Or should I say what's in a description? Or should I say how do we class people and things? Some people are fat to me and husky to another. Some people are skinny while others view them as wiry. Some people are looked at as tall while others view them as good sized. We have these same confusing labels in our businesses and the ones that confuse everyone the most are sideliner, part-time or hobby beekeeper.

I believe that this group may become the mainstay of our industry. This group of beekeepers is the hidden, underground portion of our business. They produce an undetermined amount of honey and do it very well. They have a tendency to market their own honey and do it in a way that the rest of the industry should look at closely. It seems they have not only an interest in beekeeping, but they have a passion for it. They are willing to learn and they do listen to others. This group of beekeepers are the best at attending meetings and seminars. They also share their ideas willingly.

As a group they have some clout and power and they seem to use it wisely. Where there is a honey booth at a state or county fair this group is the backbone of making sure it runs smoothly. They have a sense of what it takes to make their type of promotion work, plus they understand that their type of regional promotion will return money to them through future honey sales.

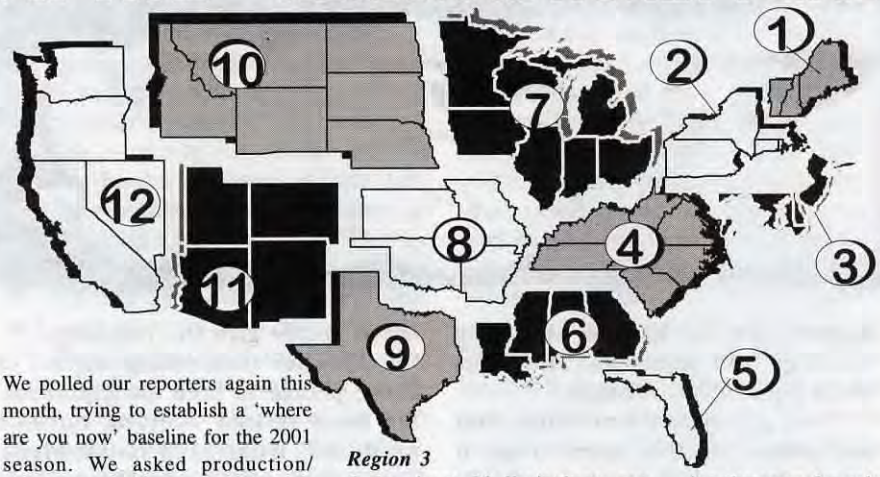
This group also handles the local pollination problems such as local gardens, backyard orchards and numerous urban flower gardens. Their services to our industry are countless. In most cases this group does many hours of public relations work for the whole industry and they do it on street level where it is very, very effective. There is not an ad in any paper, magazine or radio that could equal the face to face good will these people give the industry.

Another interesting aspect of these people is their backgrounds. We have retired doctors, curious students, frustrated housewives, ambitious office employees and many others that fill this vast pot of beekeepers. They range in all ages plus there seems to be a great deal of women that have this interest.

Still the one area that sticks out as their ace card is that they sell what they produce. Plus they don't compete price wise like the rest of the industry. They as an individual may make only 200 pounds per year and they view it like that is my 200 pounds and it's the best there is to buy and they price it that way. Honey industry: Take notice that is the correct way to market honey.

Thank you sideliners. Thank you part-timers. Thank you hobby beekeepers. You are a very important part of our industry and you may be the center of our industry. BC

APRIL - REGIONAL HONEY PRICE REPORT



We polled our reporters again this month, trying to establish a 'where are you now' baseline for the 2001 season. We asked production/colony from last year, carry-over from last year's crop, average price/lb. for last year's crop (wholesale/retail combined), will they be increasing colonies this year and will they be changing prices this season. We'll do this again at the end of the season.

Region 1

Average production/colony was 63 pounds. About 50% of last year's crop is still unsold, average price is $1.12. Mixed on increasing colonies next year and keeping the price the same, or increase. None are decreasing price.

Region 2

Production/colony was 56 lbs. 53% of last years crop is unsold, with average price at $1.53/lb. 63% will decrease colonies, 25% increase, 12% the same. 88% will keep prices the same, 12% increase.

Region 3

Only about 30 lbs/colony produced, on average here this past year. No carryover, either. Price averaged $.80/lb. Downsizing is the word from almost everybody, and nobody is raising prices this season.

Region 4

46 lbs./colony was the average last season, and reporters still have about 30% of it left. Selling at $2.09/lb., on average is a pretty good price. 20% plan on increasing, 60% staying the same size and 20% will downsize next year. Only 20% will increase prices.

Region 5

134 lbs. was the average crop, but hardly anybody has any left, of the reporters who answered the survey. Average price was $1.08, and about an equal mix for increasing, decreasing and remaining the same for colonies. Nobody is raising prices.

Region 6

Average crop was 88 lbs./colony last year, and about 25% of it is still left. Average price was $1.25/lb. Half will remain the same size, half will increase. 75% will keep prices the same, 25% will increase this season.

Region 7

Average crop was 68 lbs./colony, and about a third is left so far this season. Average price is $1.08/lb.40% will downsize this year, 40% are remaining the same, and only 20% are increasing. 85% are keeping honey prices the same as last year, while 15% will be increasing them.

Region 8

Reporters averaged 65 lbs./colony last year, but 47% of it is left unsold so far. Average price was $1.60, and it's an even split between those who are increasing, and those who aren't. 80% will keep prices this season the same, while 20% will increase.

Region 9

78 lbs./colony was the average last season for these reporters, but 35% of it remains unsold. Average price was $1.75/lb. 66% will be decreasing or remaining the same size next year, while the rest will actually be increasing their number of colonies. 70% will keep honey prices the same, 30% will be increasing prices.

Region 10

Good crop average of 113lbs./colony last season, but 90% of it remains unsold so far. A mixed blessing. Average price was $.58/lb. Fully two thirds of the reporters are downsizing next season, and only a third are increasing their prices.

Region 11

Average crop was 70lbs./colony, but nearly 40% is still unsold. Average price was $1.10/lb. No reporter has plans for expansion, or increasing prices next year.

Region 12

A 69 pound average for all our reporters last year, with fully a third left unsold so far. Average price was $1.32. Half plan to expand next year to accommodate pollination, but 60% don't intend on raising prices.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12			Last	Last
Extracted honey sold bulk to Packers or Processors													**Range**	**Avg.**	**Month**	**Yr.**
Wholesale Bulk																
60# Light (retail)	69.75	73.00	74.00	70.75	75.00	64.67	61.03	67.00	85.00	77.50	85.00	55.00	45.00-140.00	70.42	69.54	68.26
60# Amber (retail)	65.18	66.55	68.00	70.00	67.50	63.00	61.50	61.30	60.00	62.00	80.00	51.67	45.00-130.00	65.82	65.94	64.32
55 gal. Light	0.59	0.70	0.61	0.64	0.65	0.52	0.60	0.61	0.61	0.54	0.70	0.65	0.46-0.75	0.62	0.61	0.65
55 gal. Amber	0.56	0.65	0.60	0.60	0.55	0.52	0.55	0.60	0.48	0.50	0.61	0.59	0.43-0.78	0.58	0.57	0.60
Wholesale - Case Lots																
1/2# 24's	27.95	29.49	30.09	32.16	30.09	28.00	28.13	30.09	30.00	30.09	24.00	25.75	24.00-37.20	29.08	29.46	39.19
1# 24's	42.40	41.82	48.00	45.32	45.00	44.50	41.09	42.80	44.70	42.00	51.00	45.25	26.10-54.00	43.53	43.73	43.34
2# 12's	39.12	40.27	45.60	45.61	40.00	36.30	37.55	41.00	40.08	35.40	46.00	43.37	29.40-53.48	40.03	40.77	39.34
12 oz. Plas. 24's	36.29	35.72	44.40	35.47	35.00	40.40	36.00	36.00	39.40	35.60	42.00	35.32	26.40-48.00	37.09	36.27	36.93
5# 6's	41.02	43.01	54.00	46.75	44.07	36.00	39.71	39.00	48.00	41.25	60.00	34.79	30.00-60.00	42.20	42.09	42.37
Retail Honey Prices																
1/2#	1.77	1.52	2.83	2.17	1.19	1.67	1.55	1.70	1.90	1.49	3.00	1.67	0.95-3.59	1.79	1.80	1.76
12 oz. Plastic	2.33	2.15	2.90	2.46	2.40	2.44	1.98	2.20	2.79	2.08	3.40	2.01	1.19-5.00	2.35	2.26	2.23
1 lb. Glass	2.74	2.40	3.00	3.19	2.91	2.79	2.27	2.62	3.29	2.39	4.00	2.64	1.50-5.00	2.77	2.81	2.68
2 lb. Glass	4.51	4.17	4.80	5.68	4.37	4.33	3.90	4.88	4.79	4.21	4.79	4.38	2.79-7.00	4.59	4.55	4.41
3 lb. Glass	6.21	5.71	7.80	7.07	6.50	7.16	5.68	6.13	6.83	5.19	5.49	5.60	3.75-10.00	6.35	6.48	6.26
4 lb. Glass	7.38	6.73	7.93	8.74	7.93	7.53	6.33	7.98	8.00	8.50	7.93	8.20	4.05-12.00	7.73	8.04	7.90
5 lb. Glass	9.52	10.17	11.00	10.86	10.00	8.50	8.69	10.99	8.00	9.95	11.95	7.94	6.50-16.00	9.69	9.67	8.66
1# Cream	3.37	3.17	4.13	3.89	4.13	3.16	2.88	2.88	6.00	3.04	5.25	2.93	2.00-6.99	3.40	3.11	3.27
1# Comb	4.38	4.70	3.60	4.23	5.10	4.17	4.43	4.11	4.38	5.10	7.50	4.56	1.95-8.90	4.46	4.35	4.22
Round Plastic	3.42	3.11	3.60	3.14	3.45	3.50	3.43	3.66	3.45	3.45	4.88	3.81	1.80-5.00	3.56	3.82	3.79
Wax (Light)	2.40	2.75	3.00	1.80	2.81	4.00	1.86	1.75	3.10	2.81	2.05	2.32	1.00-5.00	2.44	1.59	2.47
Wax (Dark)	2.18	2.00	2.75	1.67	2.48	3.83	1.85	0.70	4.00	2.48	1.75	2.05	0.70-4.50	2.24	1.24	2.18
Poll. Fee/Col.	38.00	40.33	40.00	38.50	35.00	38.33	38.50	39.50	24.00	38.02	50.00	40.00	20.00-55.00	39.05	38.01	36.87

Mark Winston

Bee Books and Things

"Whatever the reason, beekeepers are unusually contemplative, marching to a different buzz than your average guy on the street."

We beekeepers tend toward the proudly eccentric, treasuring our individuality and defending our right to be different from other people. Perhaps it's the long hours we spend alone, with only millions of stinging insects to talk to. Or, all those stings over the years might do something peculiar to our brain chemicals. Whatever the reason, beekeepers are unusually contemplative, marching to a different buzz than your average guy on the street.

This ability to be different is a gift, one asserted in the innumerable ways in which beekeepers are innovative, creative and expressive. Even so, there is one area of our industry and craft that has always struck me as especially original and artistic, and that is those who write or sell bee books.

The British have taken the selling of bee books to its highest art form, with their typically droll humor and detail-embracing love of all things written. British bee booksellers tend to be unkempt and grow massive grey beards, locate themselves in quaint villages with obscure names like Hay-on-Wye and dwell in thatch-roofed cottages that seem better suited to fairy tales than to business.

An English beekeeping meeting would not be complete without a book display, and a major meeting will attract five or six booksellers whose booths overflow with strange and wonderful books about everything bee. These booths also overflow with book readers and buyers, and are sites of passionate discussion concerning the merits of the innumerable books old and new stacked on groaning shelves to tempt the book lovers.

Here in North America, bee book selling is less of a phenomenon, and it is rare to find a booth at a beekeeping meeting that sells anything but a handful of current books. It may be our Canadian heritage from Britain, but Canada does have one book selling couple who make the rounds of our meetings, although neither of them has a grey beard and they live in a conventional and unthatched house in a British Columbia town with the boring name of Armstrong.

Doug and Eileen McCutcheon operate Bee Books and Things, with Doug doing more of the "bee books" and Eileen handling more of the "things." Doug is now into his fourth career in bees, having previously worked as a commercial beekeeper, functioned as the provincial apiculturist in Saskatchewan and later British Columbia, and most recently retired from his last real job, marketing pheromone-based beekeeping and pollination products for a Vancouver company, Phero Tech. Eileen is a long-time hobby beekeeper and bee club organizer whose appreciation of products like soaps, candles and bee knickknacks provides a nice balance to their book business.

Doug has the perfect personality for selling bee books, because he is a packrat and collector, loves to talk to beekeepers and has a genuine passion for books. I have spent many a delightful hour at their home or looking over their display at meetings, chatting about the latest bee books, gossiping about the authors and complaining about how the publishers have difficulty believing that someone would really order more than one copy of a bee book.

The diversity of books about bees that the McCutcheons and others sell is astounding. A quick trip through their catalog jumps from books about bee management to biology, candle-making through honey and beeswax and queen rearing to beekeeping history. Just the "P's" include pollen plants, pollination, pesticides and products. A few of the other subject areas include children's books, apitherapy, diseases, mead, comb honey, cookbooks, venom and memoirs from beekeepers inclined to reminisce on paper.

These are not only old books; many of them were published in the year 2000, and I'm sure an equal number will come out this year and in years to come. The year 2000 selections include titles like *Making Candles and Potpourri*, *Honey Bee Biology and Beekeeping*, *CLAN APIS*, *The Observation Hive*, and *Folk Medicine*, among many others.

I have a particular fondness for books about bee biology, because I'm a biologist and writer by occupation and these books inspired my fascination about bees and a passion for

Continued on Next Page

"A browse through a bookseller's stall is a trip through history, a journey into expression and image and a delightful education in the diverse and rich perspectives that writers have brought to us through bees."

writing about them and other things. My all-time favorite bee book was written by Ronald Ribbands in 1953, whose sterling career as a scientist and writer was cut short by a tragic automobile accident shortly after his classic book *The Behaviour and Social Life of Honeybees* was published.

What still strikes me today about this book is how well he wove literature and bees together. The book starts with a wonderful quote from John Hunter, a Fellow of the Royal Society, who wrote in 1792, "*The common bee, from a number of peculiarities in its economy, has called forth the attention of the curious; and from the profit arising from its labours it has become the object of the interested.*"

Some chapters begin with other quotes that highlight the topic to come, sometimes insightfully inspiring and other times just funny. His chapter on drifting, for example, begins with words from the well-known song "*Show me the way to go home, I'm tired and I want to go to bed, I had a little drink about an hour ago, and (it's gone) right to my head . . . .*"

Ribbands himself was a marvelous writer, using everyday English clearly and without jargon, and with that simplicity of expression that can take the complex and make it comprehensible. His writing also reached back into discoveries from the more distant past and moved forward, speculating on important research to come. For example, his writing about swarming began with a description given by Huber from 1792, then drew on recent findings to connect Huber's observations with contemporary theories on why bees swarmed and how to prevent it, and moved on to predict many of the research directions that became exciting in subsequent years.

Another personal favorite bee writer is Maurice Maeterlinck, whose 1901 book *The Life of the Bee* is one of the most stunningly beautiful and evocative pieces of nature writing ever to grace the printed page. Maeterlinck was a Belgian poet, philosopher and playwright best-known for his Nobel Prize-winning dramas, poems and books about the soul, communication and human responsibility. He also wrote about nature and how through the living world he found meaning after rejecting formal religion.

His admiration for bees and love of nature come through strongly is his writing, especially when he describes being out with his bees: "*The hives lent a new meaning to the flowers and the silence, the balm of the air and rays of the sun . . . One was content to rest at this radiant crossroad, where the aerial ways converge and divide that the busy and tuneful bearers of all country perfumes unceasingly travel from dawn unto dusk. One heard the musical voice of the garden . . One came to the school of the bees, to be taught the preoccupations of all-powerful nature, the harmonious concord of the three kingdoms, the indefatigable organization of life.*"

A third favorite bee book of mine was written by R.E. Snodgrass, the renowned insect morphologist who worked out of the U.S. National Museum in Washington, D.C. His classic book *The Anatomy of the Honey Bee* was published in 1956, but it is not nearly as accessible to the reader as the works of Ribbands and Maeterlinck. Snodgrass wrote in the dense prose of the scientist, deeply dependent on jargon and assuming extensive and detailed knowledge of insect anatomy.

To me his prose sings, because I know the jargon and appreciate the precision with which he writes and the underlying elegance of the minute structures he describes. Admittedly, a line like "*The part of the pleuron below the sulcus is therefore the episternum and that above it the epimeron*" is not inspiring.

Yet, even Snodgrass has his moments: "*The proboscis allows the bee to draw nectar from the depths of flower corollas, the broadened hind legs of the worker serve for the transport of pollen, and the petioled abdomen acquires freedom of movement for the use of the sting . . . The anatomy of an animal is merely the machinery by which the animal lives, and we can now explain most of the mechanisms by which the worker bee carries on her activities within and without the hive. Yet the mystery remains of how the bee knows how and when to use the various tools and gadgets with which she is provided.*"

I am in awe of these and innumerable other writers of old, and grateful to today's booksellers who keep their works and those of current authors available and alive. A browse through a bookseller's stall is a trip through history, a journey into expression and image and a delightful education in the diverse and rich perspectives that writers have brought to us through bees.

For those of you who are Web-friendly, you can access the world of grey-bearded British book merchants easily by doing a keyword search for "bee books," which will download a lifetime of contacts for your reading pleasure. You won't find the McCutcheons, however; they still prefer books to computers, but they do answer the phone and postal mail. They can be reached at 250-546-9870, or 2525 Phillips St., Armstrong, British Columbia, VOE 1B1, Canada.

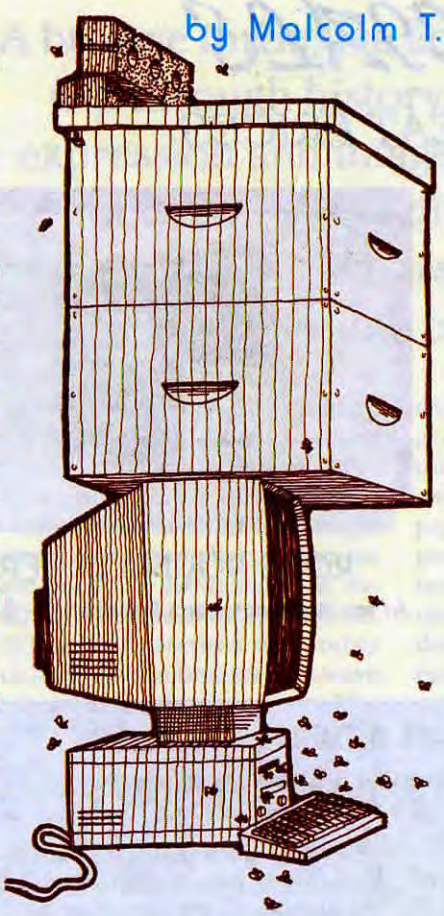
Happy reading. BC

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

Beekeeping In The Digital Age

by Malcolm T. Sanford

Api-Consult: Focus on African Traditional Beekeeping



The digital age continues to empower programs through World Wide Web technology. This is certainly true for those who work in what is called developmental beekeeping. This activity uses beekeeping as a vehicle to bring education to many regions of the world. The cradle of beekeeping is probably Africa. And the activity continues there today at many levels, from the most basic to the technologically advanced. The former is the arena of a program called Api-Consult. The manager is Mr. Tom Carroll, originally from Ireland, where he studied the racial purity of Irish bees at University College Dublin. He moved to Africa in 1993. Recently he sent me an e-mail about this program as found on the Web at **http://www.apiconsult.com/index.htm**:

"I came up with the idea for the site in Spring of 1999 as there is very little on the internet about beekeeping in the African context using fixed comb traditional and top bar hives. My work takes me all over East Africa training on beekeeping as a consultant for different NGOs and donor organisations. I work in Ethiopia, Sudan, Somalia, Kenya and Uganda. Beekeeping in this part of the world is very different as most of honey and wax is produced from wild honey collection and traditional fixed comb hives. The temptation is to introduce 'modern beekeeping' such as frame or top bar hives. This should be done very carefully however - we should not overlook the merits of existing beekeeping. For example in Sudan traditional beekeepers use the leaf of a certain plant to subdue bees when they wish to harvest. The leaf is rolled up and inserted into the hive making the bees unconscious long enough for the hive to be harvested. Beekeepers in the highland forests of Kenya use a special moss to smoke the bees which make them docile and easier to harvest. Each community/tribe in Kenya has its own tradition of beekeeping using their own design of hive suited to the climatic conditions of the area in which they live. Often we notice that top bar or frame hives in the same area have a much lower occupation rate or are more prone to pests such as the honey badger."

The Api-Consult home page offers first class consultancy services for sustainable beekeeping development to the world. It has a link to the **Hargeisa Trade Fair**, to be held March 3rd-5th 2001 in the self-declared republic of Somaliland in North-West Somalia. in collaboration with **Progressive Interventions (PI)** of Ireland and the Somaliland Chamber of Commerce. This Fair is of particular interest to beekeepers as PI are organizing a stand on beekeeping. PI are interested in promoting beekeeping as an important income generating activity for the Somali people. In Somalia there is a very strong local demand for honey - in particular for medicinal purposes. Also considerable export potential exists for honey from Somalia to the Gulf States. The PI is a non-profit organization contributing to poverty elimination in developing countries through sustainable job creation: HEAD OFFICE: 568 NCR, Dublin 1, Ireland. Tel: 353-1-8557481. Fax: 353-1-8557580. **info@pinterventions.org**

Another link leads to the **Kenya Beekeepers Association** (KBA). This organization was started in 1954 by white farmers, but languished through the decades of the 1970s and 1980s, although the Canadian Government through CIDA (Canadian International Development Agency) invested considerable funds and energy to develop beekeeping in the country. During that period, beekeepers and extension agents were trained and the **Kenya Top Bar Hive** (KTBH) was developed.

In March 2000 a team of committed beekeepers in Kenya along with some Government extension officers at the National Beekeeping Station in Nairobi decided that it was time to revive the KBA. National elections were held which elected a committee representing the 7 provinces of the country. The KBA committee has taken to its work very seriously and with great commitment. It has been actively recruiting new members to the national association including Beekeeping Associations, Universities and Colleges, NGOs (Non-Governmental Organizations), Honey Processors and Individual Beekeepers.

Activities of the KBA include: 1) Ongoing awareness building among all interested organizations and individuals on the importance of beekeeping and recruitment of members into the KBA; 2) Field visits to various parts of Kenya to create awareness among/solicit the views of ordinary beekeepers and establish the situation of beekeeping on the ground in Kenya; 3) A one day workshop on the future of beekeeping in Kenya bringing all stakeholders in the industry together (October 2000); 4) Development in Kenya of an internationally

recognized KBA training curriculum both at certificate and diploma levels. A pilot two week training course was carried out at Baraka Agriculture College, Molo from 19th November to December 2nd 2000. Participants included beekeepers from Zimbabwe, Malawi and Somali as well as from Kenya; and 5) Staging of a National Honey Show in March 2001 in Nairobi. For other information, contact the Kenya Beekeepers Association Box 34188, Nairobi Kenya, Tel 254+2+56430.

The **services** provided by Api-Consult include village-level training of farmers in appropriate beekeeping systems and income generation from value added products from honey, beeswax and propolis. Of special significance is the training of trainers program in appropriate and sustainable beekeeping methods in association with **Baraka Agricultural College, Molo, Kenya**. This school was founded by the Catholic Diocese of Nakuru in 1974 and since then it has been educating and training school its regular students and farmers in agriculture and rural development. Links to **other Web sites** are found on the Api-Consult site as well as a **picture gallery** of traditional African beekeeping activities.

The **philosophy** of the site is in keeping with that of other development programs based on beekeeping and incorporates much of Mr. Carroll's ideas as expressed above. Of great significance is **advice** for development agencies promoting beekeeping in Africa. Basically Mr. Carroll says the same mistakes are repeated over and over again by different organizations promoting the activity. Lessons are often not shared among implementing agencies. These include:

1. **Origin of the idea:** Has the idea to keep bees come from the clientele or has it come from outside? An obvious criteria for selection of the target group is if they are already practicing beekeeping of some description. If the project is willing to work with starters in beekeeping this is good too however these people will require much more help and technical backup. The project must be clear who it is working with and what are the special needs of that group so that these can be addressed. For example women beekeepers may be the target group – in some cultures it is taboo for women to wear a bee suit or handle bees – check it out before hand!

2. **Promoting beekeeping in unfavorable areas:** Is there a realistic possibility of producing honey in the area – is it too dry or arid? Are there existing traditional beekeepers or honey hunters?

3. **Promotion of 'Modern' hive designs without sufficient backup and training:** The table shown below, for example, of beekeeper preferences shows that the log hive comes out the best with the KTBH second and the basket hive last. If the KTBH hive is not managed to gain the advantages it has due to its moveable combs then it will be outperformed by the log hive. A KTBH (or Langstroth) which is not managed, producing crude honey is actually worse than a log hive because of its high purchase price.

Table: Beekeeper's preference for different types of hives around Kakamega forest:

HIVE TYPE:	KTBH	LOG	BASKET
Quantity harvested	2	3	1
Ease of Harvest	3	2	1
Heat Properties	1	3	2
Least Cost	1	2	3
Resistance to Rain	3	2	1
Durability	2	3	1
TOTAL:	**12**	**15**	**9**

3=best, 2=second best, 1=last

Frequently projects distribute free top bar hives to people in the belief that the hive itself is going to provide benefit to producers. The top bar and frame hives will not give any benefit above local traditional hives without intensive follow-up and training practically at beehives and not in the classroom! A lot of projects fail to give this practical backup and support.

4. **Introducing modern hives but failing to introduce other vital equipment such as smokers and beesuits:** Beekeepers in this case will continue to harvest their bees in the same way as before, harvesting at night using fire/excess smoke. No management of the bees will take place giving little/no overall benefit to the beekeepers above their traditional systems.

5. **Failing to get hives occupied:** After promoting the 'modern' hive many projects fail to assist beekeepers to get them occupied. Hives remain empty producing nothing and beekeepers become disillusioned. Traditional systems are adapted to the local environment and are low cost. They have merits. Traditional systems should be built on and modifications/improvements suggested. Excellent honey can be harvested from traditional hives and wild bee colonies provided care is given in harvesting and handling honey. After 30 years of beekeeping development in Kenya for example most of the honey produced in the country (>90%) comes from traditional beekeeping systems.

6. **Cost sharing:** A project should aim to cost share on the provision of expensive items (e.g. beesuits) This gives beneficiaries a feeling of involvement and demonstrates commitment to the aims of the project.

7. **Poor marketing:** Many projects train farmers to produce higher quality produce. This is of little use if the beekeeper takes the honey to the same market as before and receives the same price as his previous low quality honey from traditional hives. The same applies to training people on the value of beeswax and propolis and not assisting them to use these products or find markets for them.

The above seven points are essential for anyone either beginning or working in a beekeeping development project. Although oriented to Africa, this author's experience is that these are applicable almost anywhere else in the world. Availability of this information on the World Wide Web means that it will no longer be excusable in the digital age to repeat these sins of the past so often committed by organizations and/or individuals that promote honey bee culture as a way to improve the lot of much of the developing world. BC

Dr. Sanford is Extension Specialist is Apiculture, University of Florida. He publishes the APIS Newsletter: ***http://www.ifas.ufl.edu/~mts/apishtm/apis.htm***

? DO YOU KNOW ?

Spring Management & Survival

Clarence Collison
Mississippi State University

Spring management of honey bee colonies is primarily concerned with early Spring survival and the development of strong productive colonies. The arrangement of food stores and cluster location is normally determined as early as the weather permits. Both pollen and nectar are necessary for colony development. Colony stores can be evaluated by merely lifting the hive, or checking to see if the Winter cluster is close to the top of the upper most hive body. It is important to have adequate supplies of food located above and to the sides of the Winter cluster since the cluster will not leave the brood area to maintain contact with its food reserves.

Take a few minutes and answer the following questions to determine how familiar you are with the basic principles of spring management and pollination.

The first nine questions are true and false. Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect.

1. ____ Skunk cabbage is an early source of pollen and nectar for honey bee colonies.
2. ____ Varieties of sweet cherries require cross-varietal pollination.
3. ____ The sugar concentration of nectar from apple blossoms is typically higher than the nectar from pear blossoms.
4. ____ *Varroa* mite populations within honey bee colonies are normally extremely high in early Spring, even though the colonies were treated in the Fall.
5. ____ European foulbrood, chalkbrood and Nosema disease are normally most prevalent in the spring.
6. ____ Treating colonies with Fumidil-B is normally done in both the Fall and Spring.
7. ____ Caucasion honey bee populations typically build up rapidly in the Spring.
8. ____ European foulbrood rarely kills the colony.
9. ____ Chalkbrood is normally most prevalent in the center of the broodnest.

(Multiple Choice Questions, 1 point each)

10. ____ Foragers bringing in bright orange pollen pellets in the spring are likely from:
    A. Maple trees
    B. Dandelions
    C. Pussy willows
    D. Apple blossoms
    E. Yellow Rocket
11. ____ Many beekeepers treat their colonies in the spring with Terramycin as a preventative against:
    A. American foulbrood, Sacbrood
    B. Nosema disease, European foulbrood
    C. Chalkbrood, Sacbrood
    D. European foulbrood, Sacbrood
    E. European foulbrood, American foulbrood

Fill in the blanks (1 point each)

Melissococcus pluton is the pathogen that causes (12.) _____ in honey bee colonies. The (13.) _____ grow and multiply in the midgut of the larvae. This pathogen contaminates the mouthparts of (14). _____ and the food that larvae are fed contains this pathogen. The pathogen does not produce a toxin, they do not invade the tissues, nor do they do any mechanical damage. They simply live on the larva's food: they are (15.) _____. If a larva is infected when it is very young and receives a large number of the pathogens, then its growth and multiplication will result in the gut being full of the pathogen. Such a larva starves, and unless it is getting a surplus of food will starve to death prior to pupation.

16. _____ are boxes used to capture wild or free flying swarms of honey bees that would otherwise be attracted to hollow trees or cavities in buildings.

The honey bee is able to metabolize the main monosaccharides of honey and honey dew (17-18.) _____ and _____.

19. Please give three reasons why dead colonies should be removed from the apiary when they are discovered. (3 points).
20. Please give three reasons why equalizing colony strength in the spring is an important management technique. (3 points).
21. Why should honey never be purchased to feed honey bee colonies found short of food? (1 point).

ANSWERS ON PAGE 47

NOSEMA NOTES

Heather Clay

Nosema is a disease caused by the protozoan organism *Nosema apis*. It is a silent killer often responsible for considerable losses of adult bees in winter and late spring. Fortunately it is one of the easiest diseases to control through the feeding of fumagillin in syrup.

The Canadian supply of fumagillin is produced in Calgary, Alberta by Medivet, and marketed as Fumagilin B®. Medivet is the second largest company in the world manufacturing this product. Willie Baumgartner, the owner of Medivet explained that Fumagillin was originally patented by Upjohn, a pharmaceutical company, in 1953. In the rush to find new antibiotics to replace penicillin for humans, many antibiotics were developed and tested. Fumagillin was found to have no obvious potential for humans and Upjohn did not keep it. In 1957 Abbott Labs patented the product Fumidil B® for the treatment of *Nosema apis* in honey bees. About the same time a Hungarian company, called Chinoin, infringed on the rights to Fumagillin and began marketing in eastern Europe. Since Fumagillin was a minor product in Abbott's huge range of pharmaceuticals they found it more convenient to use Chinoin as the source of Fumagillin than to pursue patent infringement.

In the early days, solubility was a problem and Fumidil B® used to clump in the syrup. In 1983 Medivet got involved with development of Fumagillin and worked on improving the solubility. They marketed their improved product as Fumagilin B®. Chinoin continued to make the active ingredient and gave Medivet the distribution rights in Canada. Later a French company called Sunofi bought Chinoin but continued to use the plant in Hungary. The fermentation technology used to make Fumagillin was not high tech and relied on outdoor temperatures for fermentation. This meant that production could only be done during warm weather. Sunofi moved ahead to build a state of the art plant in India where the high tech facility allows fermentation to continue year round. Sunofi has given additional markets to Medivet so that Willie now supplies some other countries.

A long list of drugs has been tested for treatment of nosema but so far nothing works as well as fumagillin.The good news is that there has been no reported drug resistance of *Nosema apis* and we hope it will stay that way for some time.

In the United States, Mid-Con Agrimarketing, located in Olathe, Kansas owns the exclusive rights to distribute Fumidil-B. They purchase raw products from Sunofi and have it refined and packaged at an independent manufacturer in Canada. Sales of this product have increased every year, according to Joli Winer of Mid-Con, as beekeepers become aware of the devastating effects nosema has on their bees. BC

Heather Clay is Executive Director of CHC.

Symptoms of nosema disease resemble those of others such as tracheal mite infection, paralysis, pesticide poisoning, starvation and dysentery.

Signs of nosema

- swollen abdomen
- crawling bees
- inability to fly more than a few feet
- disjointed wings
- dysentery
- increasing restlessness
- dwindling weak colony
- absence of stinging reflex
- early supersedure of queens

A healthy midgut is smooth and tan. Infected are white and constricted.

Effects on bees

- digestive system impaired
- premature aging and death
- hypopharyngeal glands degenerate and cannot digest pollen for brood food or royal jelly
- bees starve

Recommended Treatment Rate

25 mg Fumagillin base per quart of syrup

Spring treatment

When colonies are stressed due to inclement weather, spring management, mite infestation, or disease,

- 3-4 quarts for each 2 chamber colony
- 2 quarts for each 1 chamber colony
- 1-2 quarts for each 5 frame nucleus colony.
- 3-4 quarts for each package colony

Package bees should be medicated when hived

Colonies used for queen banks should receive medicated syrup throughout their use.

Removal

Syrup containing the active ingredient must be removed from colonies 30 days before the honey flow.

Stages of nosema

The dormant stage of nosema is a long lived spore which is resistant to temperature extremes and dehydration. Nosema spores are ingested by adult bees and pass through the honey stomach to the midgut (ventriculus). In the midgut the spores become active, germinate and form a long tubular filament that penetrates a cell of the midgut lining. The contents of the spore then use the hollow filament as a route of entry into an epithelial cell in the lining of the midgut. Inside the cell this vegetative stage of nosema begins to multiply and grow. Many new spores are produced inside the epithelial cell. Eventually the nosema infected cell ruptures and the spores are released into the bee gut. They pass out of the bee in its feces. If the bee defecates in the hive these spores infect other bees through shared housecleaning and feeding activities.

Fumagillin has no effect on nosema spores but does stop vegetative stage reproduction when the medication is continuously available in honey bee food.

2000 USDA Honey Report

It's time again for the annual NASS, USDA Honey Report. Each year they query beekeepers in the U.S., counting colonies, yield, prices, carry over and value. They don't count those of us with fewer than five colonies though, but they never do so their numbers are fairly consistent. See the chart for every state's results on the following page.

Each year we try to look at these numbers a little differently. Last year we looked at consumption using both the Honey Board's data and USDA data. Using Honey Board data again this year per capita consumption has decreased from 1.32 lbs/person to 1.30 lbs/person or from 21 ounces to 20 ounces – essentially flat. Note that there are at least 3.4 million more people in the country this year. Using USDA figures, which include carry over and exports, per capita consumption rises from 1.66 lbs/person to 1.76 lbs/person (26.6 ounces to 28.2 ounces).

This year though, we're doing a little historical work. The chart below shows data for the last decade with some averages at the bottom. Production is, mostly, a function of the weather as it always has been. The number of colonies has slowly dropped, with 17% fewer now than a decade ago. This reduction is a function of, and a result of, price. And price has had two major influences in the past 10 years – imports, and import restrictions.

	1999		2000	
	x1000 # Colonies	x1000 Production	x1000 # Colonies	x1000 Production
CA	505	30,300	440	30,800
ND	255	26,775	290	33,350
SD	224	23,296	235	28,435
FL	228	23,256	232	24,360
MN	145	11,890	150	13,500
TX	108	8,748	105	8,295
MT	122	8,540	148	12,728
MI	73	6,205	72	5,400
WI	80	6,000	84	7,560
ID	120	5,760	100	4,700
LA	48	5,472	43	4,042
NY	69	4,830	58	4,640
AR	52	4,628	55	5,115
NE	58	4,466	50	4,350
AZ	52	3,224	40	2,360
Totals	**2,139,000** 79.6% of all colonies	**205,250,000** 84.5% of all production	**2,106,000** 80% of all colonies	**221,005,000** 86% of all production

Imports affect carry over each year also as producers have to sit on their crop longer to find a buyer.

In the far right column (shaded) we calculated what the price would have been each year without these two influences, using a conservative increase each year of only 3.0%.

Speculating on what affect that price would have on imports (higher?), number of colonies (?), and carry over (?) can be interesting, but unfortunately futile. Forces outside an individual's control will continue to both stimulate, and erode prices.

The chart above shows information from the top 15 producing states for just 1999 and 2000. Very nearly 80% of all the colonies in the U.S. reside in these states, and they produce about 85% of all U.S. honey. Not quite the 80/20 equation, but close, to the 85/15 rule.

A closer look shows some things of note. California took a 13% drop in colony numbers (there was only a 1.5% overall drop in colony numbers last year). Overall, of the top 15, seven states gained, eight lost.

Across the board the U.S. had an 8% increase in production. These 15 top states were up 7.1% over last year. Not surprisingly, every state that gained colonies showed a production increase over last year with California the exception. They produced more honey with fewer colonies.

Highlights significant increase in imports, continuing erosion of price, steady but slow decline in colony numbers, and the predictability of production from the top 15, and even more so the top 10 states.

Continued on Next Page

	Domestic[1] Production, x1000 lbs.	No[1] Colonies x1000	Imports[2] x1000 lbs.	Carry[1] Over x1000 lbs.	Overall[1] Price/lb. cents	Adjusted Price/lb. cents
91	219,171	3181	87,937	36.2	55.6	55.6
92	220,584	3030	111,984	38.9	55.8	57.3
93	230,368	2876	129,352	49.0	53.9	59.0
94	217,168	2770	125,078	59.8	52.8	60.8
95	210,437	2648	87,389	42.2	68.5	62.6
96	198,095	2564	148,323	47.0	85.9	64.5
97	192,400	2631	169,693	69.0	76.4	66.4
98	220,300	2633	135,396	80.8	65.5	68.4
99	205,200	2688	174,302	79.4	60.1	70.4
00	221,000	2634	194,188	86.1	59.4	72.5
Avg.	**213,422**	**2765**	**136,364**	**58.8**		

[1]USDA NASS
[2]NHB Assessment Data

Honey: Number of Colonies, Yield, Production, Stocks, Price, and Value by State and United States, 2000[1]

State	Honey Producing Colonies	Yield per Colony	Production	Stocks Dec 15[2]	Average Priceper Pound[3]	Value of Production
	1,000	*Pounds*	*1,000 Pounds*	*Cents*	*Cents*	*Dollars*
AL	16	78	1,248	187	59	736
AZ	40	59	2,360	1,322	73	1,723
AR	55	93	5,115	3,529	57	2,916
CA	440	70	30,800	11,396	58	17,864
CO	29	60	1,740	957	62	1,079
FL	232	105	24,360	2,923	54	13,154
GA	55	57	3,135	376	63	1,975
HI	7	112	784	125	81	635
ID	100	47	4,700	2,679	52	2,444
IL	8	61	488	146	117	571
IN	8	65	520	286	103	536
IA	30	67	2,010	1,206	67	1,347
KS	15	68	1,020	520	91	928
KY	3	48	144	40	135	194
LA	43	94	4,042	1,334	52	2,102
ME	11	21	231	143	75	173
MD	6	46	276	52	114	315
MI	72	75	5,400	2,970	60	3,240
MN	150	90	13,500	3,105	57	7,695
MS	17	72	1,224	649	69	845
MO	23	75	1,725	362	60	1,035
MT	148	86	12,728	5,982	59	7,510
NE	50	87	4,350	2,610	59	2,567
NV	10	35	350	95	145	508
NJ	11	35	385	200	61	235
NM	15	64	960	739	72	691
NY	58	80	4,640	2,274	55	2,552
NC	11	49	539	243	143	771
ND	290	115	33,350	13,340	56	18,676
OH	18	65	1,170	585	79	924
OK	7	35	245	64	126	309
OR	48	51	2,448	1,665	66	1,616
PA	22	45	990	554	76	752
SD	235	121	28,435	12,796	57	16,208
TN	9	61	549	104	143	785
TX	105	79	8,295	2,986	57	4,728
UT	24	41	984	462	60	590
VT	7	59	413	211	68	281
VA	7	42	294	103	150	441
WA	52	54	2,808	1,151	58	1,629
WV	7	54	378	234	122	461
WI	84	90	7,560	4,385	68	5,141
WY	39	93	3,627	798	59	2,140
Oth Sts[4]	**17**	**40**	**685**	**270**	**173**	**1,183**
US[5]	**2,634**	**83.9**	**221,005**	**86,158**	**59.4**	**132,205**

[1]For producers with 5 or more colonies. Colonies which produced honey in more than one State were counted in each State. [2]Stocks held by producers. [3]Prices weighted by sales. [4]CT, DE, MA, NH, RI and SC not published separately to avoid disclosing data for individual operations. [5]Total colonies multiplied by total yield may not exactly equal production.

Weslaco, Texas is about as far south as you can get in Texas and still be in Texas. Just outside of town is an extensive agricultural research station. Texas A&M and USDA ARS share the facility, and a great many projects are constantly underway.

A large citrus program is located there, looking at varietal selection, pest control, management and marketing. Sugar cane, cotton, sorghum, and other vegetables are also featured.

Plant breeding, efficient irrigation practices, pesticide use and IPM for many of the crops grown there, along with profitable alternative crops are studied.

Much of the money to fund these studies comes from the Texas Citrus Producers and funding from a variety of marketing orders.

There are currently 31 full time scientists located at the Weslaco lab, with six vacancies. The station has a hard budget of $3.9 million and about a million in soft money.

Located in a relatively new building on this research campus is the honey bee research group. Currently part of the Beneficial Insects Lab, the USDA Bee Group has been a part of Weslaco lab for years. Several years ago the bee lab went from being an independent group, with their own lab leader to working within the Beneficial Insects unit.

It stayed this way for several years, with Dr. Bill Wilson acting as Lead Scientist for the group, but remaining a part of Beneficial Insects.

Today, the Bee Unit has three resident scientists, with room for two more, one being the again-created position of Research Leader, the other a physiologist. Although recruitment efforts have been fairly intense, neither of these positions have been filled. There are support people associated with each scientist so the entire staff is larger.

Currently, Patti Elzen, Bill Rubink and Frank Eischen are the lab's scientists. Raul Rivera is a support scientist working with Patti and Walker Jones heads the Beneficial Insects section.

Patti has a 10-year background in pesticide research and is looking at several aspects of IPM and *Varroa* control. One recent project has developed the recommendation on avoiding Apistan resistance. She says to use Coumophos for two

Above, the front of the Weslaco Bee Lab. Below, the rear of the building. Inside are modern labs, workshops, offices and meeting rooms. There is enough space for six scientists and support staff. Adding the Tucson lab positions will require some squeezing.

Dr. Patti Elzen

years, Apistan for one, then Coumophos for two.

Her work with Small Hive Beetle in Florida, with James Baxter and Bill Wilson and Raul was ground breaking in uncovering this new pest's biology and control. And studies with new chemicals for controlling AFB are looking at toxicity and efficacy.

Patti also is looking at the lethal, and more importantly the sublethal effects of ag pesticides on bees, especially workers and queen.

Bill Rubink spends a lot of time with African Honey Bees. He has, and is looking at swarming dynamics, feral ecology, their tolerance to *Varroa* mites and ID techniques.

He has spent considerable time in Mexico looking at pre and post AHB migration populations of feral colonies of both African and European bees. And, he has found some of the reasons *Varroa* don't cause, or seem to cause as many problems with African bees.

He is also very involved in the Outreach program in Weslaco schools, helping with science fairs, advising students on careers in science and the like.

Frank Eischen also is busy on several fronts. He is studying the interaction of bee pesticides and crop fungicides on bees in the hive. Many fungicides are used in the humid Rio Grande Valley when bees are used for pollination at the same time. This seems to be a problem, but how much remains to be seen. He's also looking at Captan on almonds during pollination.

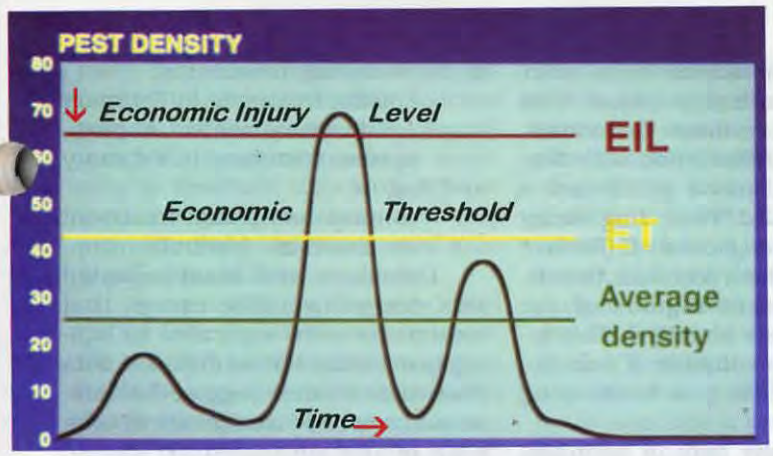
Frank, in his spare time is also looking at the effect that natural products burning in a smoker have on *Varroa*. Sumac heads, grapefruit leaves and a variety of other products have been tried – all with varying success, and failure at control.

Raul Rivera is a support scientist working with Patti. He is involved in many of the same projects, looking at interactions of bee pesticides in a hive, natural products for *Varroa* control and studies in Costa Rica, Guatemala and Mexico.

There are presently two vacancies at the Lab. In January, USDA ARS announced that the Tucson lab would be closed and the positions and budget moved to Weslaco. That would open four new positions there, making it a snug fit at that lab.

In February, USDA ARS changed its mind after some pressure from various industry groups. Now, as it stands, the Tucson lab won't close until "sometime later this year."

This leaves everything up in the air for the Weslaco lab. Two, maybe six vacant positions (none of the Tucson scientists have expressed interest in moving to Weslaco), no research leader and an 'uncertain' budget. It is an uncertain future for honey bee research, certainly. Fortunately, the beekeeping industry has good people already in place. BC



IPM & Varroa Control

James D Ellis, Jr

Combating the *Varroa* mite (*Varroa destructor* n.sp.) can be disheartening for beekeepers. Many of the synthetic varroacides available to beekeepers are expensive and require one or more annual treatments. Additionally, *Varroa* mites can become resistant to the synthetic chemicals used to control them. Baxter et al. (1998), Elzen et al. (1998), and Ellis et al. (2000) each documented *Varroa* resistance to fluvalinate (marketed as Apistan®) in the United States. Other drawbacks to the use of chemical acaricides include the potential for both honey and comb contamination and beekeeper health concerns. It is for these reasons that researchers are beginning to encourage the practice of Integrated Pest Management (IPM) in beekeeping operations around the world.

Although it has not been utilized to its full potential, IPM is a concept that has been used in agriculture for a number of years. One of the biggest success stories in IPM lies with the cotton boll weevil eradication program. Years ago, boll weevils disrupted in cotton production across the southern United States. Now, due largely to IPM, boll weevils have been virtually eliminated from large areas of North Carolina, South Carolina, Georgia and Florida.

So what is IPM? IPM is a pest control approach in which one monitors a population of pests and treats only when the pest numbers reach economically damaging levels. In most pest/host relationships, the host (in our case the honey bee) can withstand small numbers of pest infestations without suffering great losses. When the pest population reaches a critical level (termed the "economic threshold"), the hosts' well-being is at stake. It is at this point that treatment for the pest is advised (see graph shown above). Hood and Delaplane (2001) state that one of the goals of IPM is to avoid treatments at pest levels that are tolerable and to intercede with a treatment only when higher pest levels are reached.

In order to employ IPM, economic thresholds for the pest of concern must be identified.

Mautz (1987) estimated that a population of 5,000 adult *Varroa* mites would cause measurable damage to an average honey bee colony. Martin (1998) reports that, for colonies in Great Britain, if *Varroa* populations reach 2,500 mites in August or September, then colonies will die of *Varroa* complications during the following Winter. Delaplane and Hood (1997 1999) have shown that late-Summer mite populations of 3,172-4,261 represent a threshold level at which the beekeeper should treat. We term these levels of mite infestation the economic threshold.

It is possible that economic thresholds differ in varying geographic regions. Climate, brood rearing, genetic differences in bee populations and mite popula-

The ether roll is one measure of mite population in a colony. Dead mites can be counted sticking to the side of the jar. It releases about 35% of the mites in your sample.

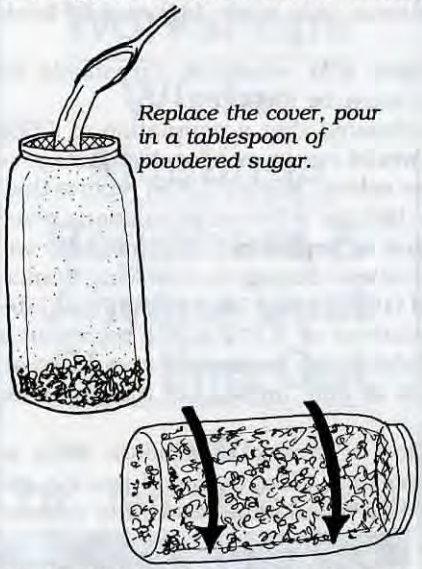
Sticky boards capture mites effectively. You can measure 'natural' mite fall, that is mites that die naturally; or the efficacy of a chemical treatment, by putting the treatment in and counting mites.

Continued on Next Page

Sugar Roll

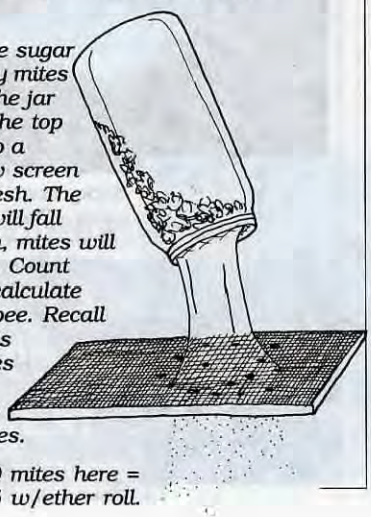
Use a quart jar with a two-part cover. Do not use the inside lid. Replace it with a same-size piece of 6 or 8 mesh hardware cloth. Fasten if necessary

Capture about 300 bees in the jar, from the center of the brood nest. (Try beforehand a few times by marking on the jar at 2" or 3" levels, capturing that many bees, putting them in a fridge until unabled and counting.) Mark the jar at the 300 bee level.



Replace the cover, pour in a tablespoon of powdered sugar.

Gently roll the sugared bees for 3 to 5 minutes, coating each bee with sugar.



Pour the sugar and any mites out of the jar (leave the top on) onto a window screen size mesh. The sugar will fall through, mites will remain. Count mites, calculate mites/bee. Recall that this captures about 75% of the mites.

65-90 mites here = 15-35 w/ether roll.

tions and other factors which affect bee colony health play critical roles in determining economic thresholds. The American Association of Professional Apiculturists published a pamphlet entitled "Protecting Honey Bees from *Varroa jacobsoni*" (Bach et al., 1998), in which economic thresholds for different regions of the United States are identified. This information is invaluable if one decides to use IPM in a beekeeping practice.

It is no easy task to ascertain an economic threshold, for it takes a lot of time and money to carry out the appropriate research. Delaplane and Hood (1997, 1999) conducted a series of experiments in which they tried to identify the economic threshold for *Varroa* mites in the southeastern United States. The first of the three experiments took place in 1996. Seventy-two colonies of newly installed package bees were set up in April of that year in Georgia and South Carolina (two states, six apiaries per state and six colonies per apiary). Throughout the duration of the study, the colonies were managed optimally for honey production. *Varroa* mite populations were calculated at the beginning and end of the experiment by determining the number of mites on adults bees and in the brood. All treatments were represented in both states and were randomly assigned within each state as follows:

- Apistan treatment in June
- Apistan treatment in August
- Apistan treatment in October
- no treatment (control)

In December, colony bee populations were highest for the apiaries treated in August. Neither colonies receiving an early acaricide application (June) nor colonies receiving a late acaricide application (October) realized benefits as high as those boasted by colonies treated in August.

Delaplane and Hood's second study was designed to build upon their 1996 experiment. In February of 1997, they organized 60 overwintering colonies in Georgia and South Carolina (two states, two apiaries per state, 15 colonies per apiary). Each colony within an apiary was equalized for initial bee population, amount of brood and *Varroa* mite population. Every colony within an apiary was randomly assigned one of the following treatments:

- Apistan treatment in February
- Apistan treatment in August
- Apistan treatment in February and August
- continuous Apistan treatment
- no treatment (control)

Delaplane and Hood repeated this design in 1998, except that treatments were separated by apiary to minimize *Varroa* drift. The data from these studies suggest that late-season acaricide treatments in colonies in the southeastern United States are advised when colony mite populations reach 3,172 - 4,261. This level of infestation can be expected if 15-38 mites are found in a 300-bee ether roll and/or 59-187 mites are found using an overnight adhesive bottomboard insert without acaricide. Overwintered colonies may benefit from an additional late Winter/early Spring treatment if an ether roll shows 0.4-2.8 mites and a sticky sheet has 0.6-10.2 mites; however, colony condition was not significantly better than that of colonies treated only once in late Summer. Worth noting is that a continuous acaricide treatment never achieved colony bee populations or brood numbers significantly higher than those in colonies treated annually or biennially. Delaplane and Hood had evidence that apiary isolation from Varroa immigration delayed the onset of the economic threshold.

Ether rolls and sticky screen inserts are valuable tools developed for a beekeeper's use in determining the presence of *Varroa* mites in a colony. To conduct an ether roll, one must simply brush about 300 bees (1-½ inches' worth) into a quart jar. Spray the bees with engine starter fluid and vigorously shake the jar for 30 seconds. The *Varroa* mites will become dislodged from the bees, and they will be easily visible on the side of the jar (see photos). Researchers at the University of Nebraska have developed a test similar to the ether roll, using powdered sugar instead of ether and thus sparing the lives of the tested bees (Macedo and Ellis, 2000). To use a sticky sheet, you simply place the sheet (some beekeeping supply companies sell prefabricated sticky sheets) in a protective wire screen and slide the screen, sticky side up, into the entrance of the colony. Re-

move the screen after an overnight exposure and count the *Varroa* mites present on the screen (see photos). It is not necessary to use an acaricide to facilitate mite drop. These tests are quick and easy, and they provide reliable indications of mite populations within a colony.

So we now know that we should not let mite populations grow above the range of 3,200-4,300 mites. Here is where research directly benefits the beekeeper. As already mentioned, Delaplane and Hood (1997, 1999) discovered that finding 15-38 mites in a 300-bee ether roll or seeing 59-187 mites on an overnight sticky sheet indicates that the colony's mite population is within the critical 3,200-4,300 range.

The failure or success of IPM is determined at this point. If one samples his colonies for mites in late Summer and finds that the mite populations have not reached threshold levels, then it is not necessary to treat. It is difficult to learn this lesson. We have grown accustomed to treating according to the calendar and not according to need. However, IPM is valuable only if it delays or eliminates a chemical treatment. If sampling indicates that it is not necessary to treat at that given time, *then one should not treat.*

Now, suppose that you find 21 mites in an ether roll, but it is only the month of June. Data suggest that one must treat because the mite population has reached the economic threshold; however, if treatment is administered in June, one's honey crop may be sacrificed. The choice becomes tough for the beekeeper. Perhaps it is best considered this way: You may make a honey crop if you do not treat, but it is unlikely that the colony or even the apiary will be around next year to produce another crop.

IPM is not only about establishing thresholds and treating when those thresholds are met, but it is also about integrating a variety of treatment options. Fortunately, beekeepers have a plethora of options available to them for use against *Varroa* mites. Pettis and Shimanuki (1999) and Ellis et al. (2000) describe a beehive floor device (bottom screen) featuring #8 hardware cloth (3 mesh per cm) that shows promise as a non-chemical method for limiting population growth of *Varroa* mites. Initial indications from essential oil studies are good. There are stocks of bees that have been shown to resist *Varroa* mites (Büchler, 1994). Trapping *Varroa* mites on brood, especially drone brood, and then destroying the brood seems to retard mite population growth (Schulz et al., 1983). Coumaphos (CheckMite+) and formic acid are two chemicals that have been made available to beekeepers for use against *Varroa*. Rotating between these and other chemicals is likely to keep *Varroa* from becoming resistant to any one chemical. The point is that there are a number of ways to combat *Varroa* under the realm of IPM. Any of these IPM approaches can be expected to delay the onset of economic threshold and the necessity to treat with a chemical.

The benefits of using IPM in *Varroa* control are numerous. The selection pressures for chemical-resistant *Varroa* will be eased. Beekeepers will spend less time using chemicals that can harm their bees as well as themselves. Hive products are less likely to become adulterated via contamination by synthetic chemicals. The bottom line is that it will save beekeepers time and money if they approach *Varroa* control from an integrated standpoint.

Varroa mites are a serious problem. If left unchecked in an apiary for more than two years, *Varroa* will cause almost 100 percent colony mortality. IPM is the most important weapon in our arsenal for use against *Varroa*. It would be extremely beneficial for North American beekeepers to take advantage of economic thresholds developed by North American scientists (Bach et al., 1998; Delaplane and Hood, 1997, 1999). We should discipline ourselves to use such standards and not treat until mite infestations in our colonies reach these levels. It is likely that the use of other IPM measures – bottom screens, resistant stock, or drone brood trapping – in conjunction with sampling and thresholds will permit us to limit chemical treatments to every 12 months or longer. IPM *is* the practice that will yield the best results in the long run. We will never rid the world of *Varroa* mites, so we must turn to integrated ways of controlling them. BC

James Ellis is a graduat of UGA. He will attend graduate school at Rhodes University in Grahamstown, South Africa, studying small hive beetles, Africanized and Cape honey bees.

References

Bach, J.C., R.G. Danka, M.D. Ellis, E.C. Mussen, J.S. Pettis, M.T. Sanford (1998) *Protecting honey bees from* Varroa jacobsoni. American Association of Professional Apiculturists, Lincoln, Nebraska, USA.

Baxter, J., F. Eischen, J. Pettis, W.T. Wilson, H. Shimanuki, (1998) *Detection of fluvalinate-resistant varroa mites in US honey bees.* American Bee Journal 138: 291.

Büchler, R. (1994) Varroa *tolerance in honey bees - occurrence, characters and breeding.* Bee World 75(2): 54-70.

Delaplane, K.S., W.M. Hood, (1997) *Effects of delayed acaricide treatment in honey bee colonies parasitized by* Varroa jacobsoni *and a late-season treatment threshold for the southeastern USA.* Journal of Apicultural Research 36 (3/4): 125-132.

Delaplane, K.S., W.M. Hood, (1999) *Economic threshold for* Varroa jacobsoni *Oud. in the southeastern USA.* Apidologie 30: 383-395.

Hood, W.M., K.S. Delaplane, (2001) *Treatment thresholds for* Varroa *mites.* In T.C. Webster and K.S. Delaplane (eds.) Mites of the Honey Bee. Dadant & Sons; Hamilton, IL.

Ellis Jr., J.D., K.S. Delaplane, W.M. Hood, (2000) *Efficacy of a bottom screen device, Apistan, and ApilifeVAR, in controlling* Varroa *sp. mites.* Apidologie, in review.

Elzen, P.J., F.A. Eischen, J.R. Baxter, J. Pettis, G.W. Elzen, W.T. Wilson, (1998) *Fluvalinate resistance in* Varroa jacobsoni *from several geographic locations.* American Bee Journal 138: 674-676.

Madcedo, P.A., M.D. Ellis, (2000) *Detecting and assessing varroa mite infestations by using powdered sugar to dislodge mites.* American Bee Journal *140 (11): 906.*

Martin, S. (1998) Varroa jacobsoni*: monitoring and forecasting mite populations within honey bee colonies in Britain. Ministry of Agriculture, Fisheries and Food in association with the Central Science Laboratory.* Leaflet PB 3611; York, England: 12 pp.

Mautz, D *(1987) Über die Folgen der Varroatose und eines Verzichts auf Bekämpfungsmassnahmen. Bericht der Bayer. Landesanst. f. Bienenz., Erlangen.* Imkerfreund 42:330-333.

Pettis, J.S., H. Shimanuki (1999) *A hive modification to reduce varroa populations.* American Bee Journal 139(6): 471-473.

Schulz, A, N. Koeniger, F. Ruttner, (1983) *Drohnenbrut als Varroa-Falle.* Imkerfreund 38: 50-51.

Pollen Preparation

Lloyd Spear

Collecting and preparing pollen correctly can and will add to your profitability.

Nutritionally, pollen is so rich and varied that it is truly a magical substance. We can all be better beekeepers by collecting and feeding it to our bees in late winter or early spring or when establishing nucs. The best pollen is that collected locally and, ideally, by you. In the previous two articles we examined pollen's nutritional values in comparison to other common foods, and how and when to feed pollen to our bees. We also discussed and briefly compared the variety of pollen traps commercially available. We still need to examine one of the myths of pollen collection, consider the possibility of pollen contamination with disease organisms or pesticides, think about when pollen should be collected, and discuss how to prepare pollen for personal consumption or sale.

One of the myths of pollen collection is that by collecting pollen the bees are somehow encouraged to collect more nectar. In fact, one manufacturer of pollen traps has recently been advertising that by using their traps "You gather more nectar-a lot more." In doing research for this series of articles I was surprised to learn that this myth goes back to at least 1984, when Malcolm T. Sanford, author of "Beekeeping in the Digital Age," a monthly article in this magazine, wrote an article in APIS (a publication of the University of Florida) attempting to debunk this and other myths.

I do not know of a single controlled study of the effect of pollen trapping on nectar production. However, at least two authors have suggested that there is little or no increase or decrease in nectar collection merely because bees are collecting pollen. In fact, many bees will collect both on the same trip. Commercial collectors of pollen that I have questioned, running 50-500 pollen traps, generally agree that there is "no measurable effect" of collecting pollen on nectar production.

So, there are lots of real good reasons for collecting pollen, but there is no evidence that I am aware of that doing so will increase nectar collection. Moreover, there is certainly no reason why using one type of trap, compared to those of other designs, will increase nectar collection.

You may wonder if you are hurting your bees by "stealing" their pollen. I also don't know of any studies that have been done on this subject, but my own experience and that of others who collect a great deal of pollen is that we see no difference in overall hive health or population. Moreover, when we have hives in the same apiary with and without pollen traps, we don't see any consistent difference in the amount of honey surplus. I am personally convinced that pollen traps let sufficient pollen get into the brood nest to keep healthy hives.

As I encourage beekeepers to collect pollen, the questions I receive most often deal with possible pollen contamination with pesticides or American Foulbrood ("AFB"). AFB is a devastating bacterial disease of larvae. In fact, for a time during the 1940's it was feared that American Foulbrood would destroy beekeeping in the United States. As the bacteria do not negatively effect adult bees, it is assumed that they carry the AFB spores on their bodies and that they therefore contaminate collected pollen. The fear of feeding pollen contaminated with AFB spores is the reason that beekeepers are advised to only feed their bees with pollen collected from their own (presumably healthy) hives. (AFB is not harmful to humans.)

While there is no question in my mind that it is unequivocally best to feed pollen from ones own hives, I am much less certain whether the possibility of AFB contamination should deter beekeepers from feeding pollen collected by others. It is widely recognized that today's American honey bees have at least some resistance to AFB. Some authors claim that AFB is everywhere, yet most beekeepers have never seen it, would not recognize it, and do not treat for it. Probably most commercial beekeepers (by number, far fewer than 10% of total beekeepers) treat for AFB, without regard for whether they have seen recent infection. This practice may be a holdover from the 1950's, before AFB resistance was building, and may not be required today. Unfortunately, in the past few years strains of AFB have been identified that are resistant to the only approved medication, Terramycin. The effect of this is that <u>if</u> AFB is encountered <u>and</u> the strain is resistant, <u>and</u> the bees fail to show resistance, the hives or hives may be lost.

When AFB could be definitely controlled with Terramycin, I had little difficulty recommending that beekeepers feed pollen from an unknown source rather than forgo the benefits. Today, I still recommend that beekeepers feed purchased pollen rather than forgo the benefits, but until we have a replacement for Terramycin I strongly suggest that purchased pollen be limited to that from known sources that at least claim to not have exposure to AFB.

Honey bees collect pollen from plants, and plants are sprayed with pesticides, therefore humans should

not eat pollen. Right? I don't think so, for a couple of reasons:

1. Apples, corn, broccoli, cabbage, peaches, tomatoes, strawberries, etc. are also sprayed with pesticides, yet we readily consume them. True, these can be rinsed, while pollen cannot, but if we could not rinse these foods would they still be safe to eat? Yes, without question.

The enormous advantage, and disadvantage, of pesticides such as DDT and Chlordane was that they persisted in the soil and in plant tissue so that one application would be effective for many weeks. (Unfortunately, they also persisted (and accumulated) in animal tissue.) Except for those that are capsulated and have a controlled release, today's pesticides are only effective for hours. Moreover, even those that are capsulated have a life of only a few days.

As several days elapse from the day pollen is collected by a bee until it is cleaned, frozen, packaged and sold, any pollen contamination by pesticides applied in the United States will have lost their effectiveness long before the pollen is consumed.

2. If a honey bee collected pollen from a crop recently sprayed, it would almost surely die before it could return to the hive, so any pollen collected would not be brought into the hive.

The exception, of course, would be pollen sprayed with one of the controlled release pesticides. While usually even these would have an immediate poisonous effect sufficient to kill an organism with the body weight of a honey bee, some might be transported back to the hive and get into cells or the pollen drawer. As a maximum of around 50% of pollen collected gets into the pollen drawer, the remainder gets into the hive and is consumed by larvae and young bees. This amount of controlled release pesticide will quickly kill larvae and young bees, and the amount of pollen collected will quickly decrease by a noticeable amount!

With the sudden decrease in pollen collected, you would investigate, see the dead brood and young bees, and quickly stop collecting pollen!

While some pollen with controlled release pesticide got into the pollen drawer, the pesticide certainly would be ineffective in a few hours or days. I believe it is highly unlikely that a human would receive a dosage higher than that from eating an everyday apple or tomato.

Of course, the best protection against pesticide contamination is to avoid collecting pollen that might have been sprayed. If you are fortunate enough to live in an area where crops are not grown within a three-mile radius, avoiding pesticides is easy. Most of us are not that fortunate, but application of some common sense can still minimize the risk.

One beekeeper I know has a customer who asks for assurance that none of the pollen is collected "after dandelion bloom and before goldenrod bloom" He figures, correctly, that minimum amounts of pesticides are applied before and after these dates. Few field crops are planted or otherwise have good top or root growth before dandelions end their bloom. Soil temperatures just are not high enough. Further, few injurious insect populations are yet high enough by that date to cause damage sufficient to justify the cost of spraying. On the other hand, by the time goldenrod starts blooming almost all of the field crops are either harvested or at a growth stage where application of pesticides is not economically justified.

"Spring & Fall collections are safest."

Thus, pesticide risk can be limited by not collecting pollen during peak growing seasons. In my area (the Northeast), the main pollen production is from Red Maple and Dandelion in the spring and from Goldenrod and Aster in the fall. I estimate that even if the traps were left on all spring, summer and fall, around 75% of the pollen collected would be from Red Maple, Dandelion, Goldenrod, and Aster, so closing the trap to collection during the other months is not much of a sacrifice.

The other common sense rule is to not collect pollen when corn tassels might be blooming. The last I knew, corn was second only to cotton in the amount of pesticide used, so avoiding pollen from corn would be a good idea in any case. Adding to that, some of the most notorious controlled release pesticides are those used on corn. Further, from a nutrition viewpoint corn pollen is almost worthless. Finally, corn pollen is so fine it will quickly clog most screens on the bottom of pollen drawers, making a mess to clean up before the valuable goldenrod flow. So, even if you want to extend collection beyond the end of dandelion bloom, I advise definitely stopping before corn bloom. This would give about five more weeks of pollen collection.

Ok, all the beautiful pollen had been collected and quickly frozen. We have set aside all we could possibly use for our immediate family, feeding full hives in the early spring and nucs anytime, and want to sell the surplus. How do we clean the pollen, and what else do we have to do?

Unfortunately, there are no inexpensive pollen cleaners being made. The commercial guys don't care, as Cadillac pollen cleaners can be bought new for around $2,000 and with wholesale pollen selling for $4.00-$5.00 a pound the cleaner can pay for itself in less than a year. If $2,000 doesn't scare you (and it should not if you intend to collect 500 pounds a year or more) contact: The Hance Corporation, 235 East Broadway Avenue, Westerville, OH 43081, 614.882.7400.

They have successfully modified a seed cleaner to operate as a pollen cleaner and sell one with two motors that performs extremely well.

If you can't afford a commercial pollen cleaner, you can easily make up a jig to do the job. The object is to *quickly* (because the pollen is often not yet dried enough to retard mold) separate the good pollen from all the debris as well as the pollen dust that appears unsightly if allowed to get into the containers. As explained in the second article in this series, some pollen traps collect much more debris than others do and it is at this point that beekeepers will be glad they paid a little more

Continued on Next Page

"Dry your pollen, but don't overdry."

for a trap that leaves relatively clean pollen.

The commercial pollen cleaner starts by running the pollen and its contents through a series of grading screens that separates the dead bees and other large debris by letting the pollen fall through holes that are too small for larger items. Most beekeepers will choose to do this part by hand. Put a small amount of pollen on a piece of white cardboard or heavy paper and pick out the largest pieces of debris with stainless tweezers.

When this process is complete, the remaining debris will be principally wings, legs, and other debris of a similar size, plus pollen dust from broken pollen balls. All or almost all of this will be lighter than the pollen balls, so can be separated by air movement. One way to do this is to use a medium-size fan with an infinite speed control and a series of baffles. Put the fan in one end of a tunnel that is about six-foot long, with an opening on each end. The opening should not be much larger than the diameter of the fan. The tunnel does not need a top, but one extending from the end away from the fan to 2/3rds of the way to the fan will cut down on the mess. Make a series of 3-4 baffles the width of the tunnel and about ½ the height of the fan. Weight or brace them so the fan will not blow them over. With the fan operating, let the pollen drop into the air stream. The pollen is relatively heavy, so will only be blown a short distance before being trapped behind a baffle. The debris and pollen dust that is lighter than the pollen will be blown further, hopefully over the baffle holding back the pollen. You will have to experiment with this to get right the baffle heights and distance between baffles. Unless you want a divorce, don't try this in the kitchen or even the basement. You will be amazed at the amount of debris and pollen dust!

A variation on this that I have seen involves using a furnace blower with either a slow speed motor or a hand crank to turn the blower. Dropping the pollen into the air stream will blow the pollen balls 2-4 feet, into a plastic bag inside a carton, and the debris 5-6 feet. Do this outside!

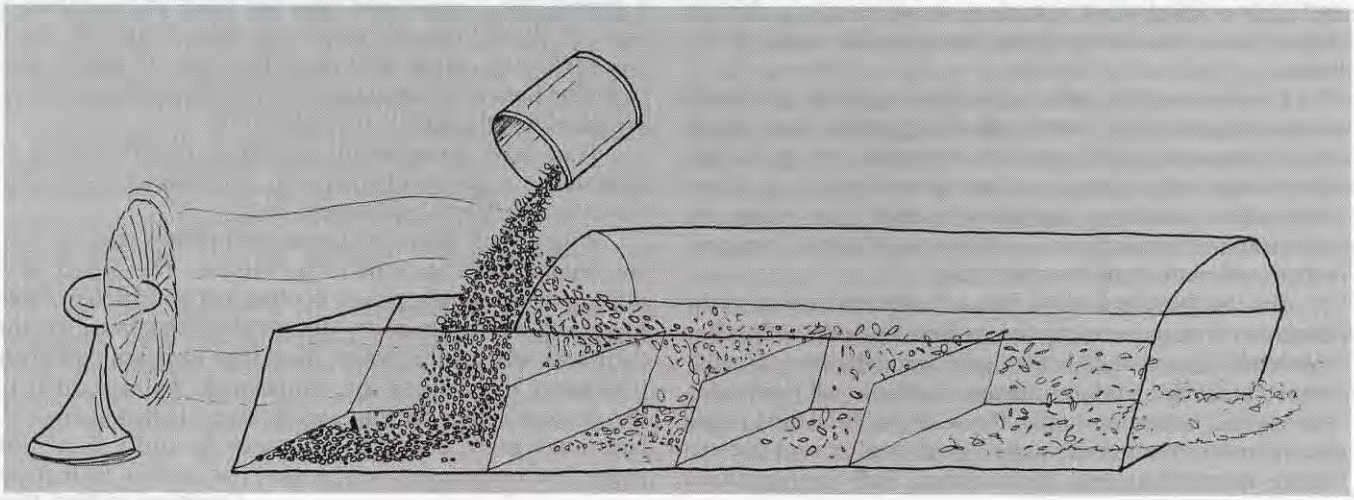
In most of the country, pollen first harvested will contain 30% or more moisture. The high moisture content coupled with the high protein and nectar contents make an ideal medium for molds and bacteria and, if untreated, will rapidly decompose through mold and bacteria action. If the pollen is to be held on ordinary shelves in jars, it must be dried to less than 10% moisture. Unfortunately, the drying procedure can significantly affect the pollen's attractiveness (color), taste, and perhaps the nutritional value.

If pollen is not properly dried it will be quickly ruined for human consumption. Fortunately, the rules are few:

1. Dry as little as possible. When collected, pollen has a moist, slightly sweet taste. This comes from the nectar mixed with the pollen by the bee, as she compacts it into her basket. The more nectar that is removed, the less sweet it will taste. If <u>all</u> the nectar is removed, the pollen will almost certainly taste *bitter*! To judge dryness, I put some pollen in the palm of my hand and gently press down and roll with a finger from the other hand. If the pollen does not mash together, it is dry enough.
2. Never dry by exposing the pollen to sunlight. Doing so will bleach the pollen so it all is a uniform light brown. I believe that the pollen in the health food stores that is a uniform light brown is imported from countries where it is sun-bleached. Jars of multicolored pollen sitting near these will *always* sell first, even at a higher price!

When I put my pollen into the freezer, I put it into bags that are inside 5-gallon buckets. I leave the tops of these bags open. Beginning when the bags are about ¼ full, I lightly stir the contents (with my hand) when adding pollen. The freezer removes much of the moisture from the pollen, using the same process that produces "freezer burn" on meats and fish. When I clean my pollen, I test it for dryness as described above. If not sufficiently dry, I put the pollen onto ordinary window screens and let sit for a day or two in a room not open to the outdoors. (*Never* put pollen into an attic or similar situation where it will be subject to very hot, dry conditions. It will quickly become almost as hard as pebbles, and just as inedible!)

Then it is usually dry enough to pass my finger test, and still tastes sweet and moist. When I sell this to



retail stores I advise them to keep it refrigerated, but I am not certain it is necessary, as I have kept unopened jars for six months without the pollen breaking down.

There is much talk these days about how a beekeeper can supplement his or her income through not just honey, but also beeswax, propolis, pollen, selling nucs, and even charging for educational seminars. Feeding pollen is a key to having strong hives, and without strong hives you cannot hope to recover any costs, let alone make any profit. However, selling surplus pollen is surely one of the most profitable endeavors available.

Let's assume that you average 100 pounds of surplus honey to a hive. This is not at all unusual in these days of few feral bees. By retailing this, assume you can realize $2.50 a pound, a high price, but surely achievable. Let's say $.50 of this goes to jars, labels, and tops, leaving $2.00 a pound for honey. From a single hive, that is $200. Let's also assume modest costs of $50 for a queen, disease and mite treatment, foundation, and amortization of hives, frames, extracting equipment, and labor. That leaves $150 net cash from the hive, a relatively high figure.

By trapping pollen from about two weeks after pollen first starts coming in until dandelions stop blooming, and again from the goldenrod and aster bloom, beekeepers in the Northeast will average 30-40 pounds of clean and dry pollen a hive. Let's say 30 pounds. If you have markets to retail honey, you should be able to get attractive jars of pollen in at least some of the same markets. *American Bee Journal* reports retail pollen prices of $5.50 to $15.00 a pound for the Northeast. I have never seen any of the $5.50, so let's assume $10, for gross income of $300. Jars, labels and tops will cost about $50, leaving $250. All the hive costs have been paid by the honey, but the cost of the trap must be amortized and it may take as much as two hours of labor to collect, clean, dry, and package the pollen. Let's say $200, net, which is almost surely too low a figure.

Adding $200 from pollen to the $150 from honey results in $350, an increase of 230% in cash from the hive! Perhaps that is worth thinking about. BC

Lloyd Spear collects and sells pollen in Guilderland, New York. He is the owner of Ross Rounds.

The Under Appreciated Bee Supply Catalog

James E. Tew

A few weeks ago, I got the last of this year's new bee supply catalogs. No big excitement there. After all, like phone books, we get a new one every year. Normally, I flip through them to see the expected listings with a few new products, but rarely are my socks knocked off at some new feature or new product. (For all you equipment manufacturers, these comments are going somewhere. Hang on.)

But for all their routineness, where would beekeepers be without equipment manufacturers and their requisite catalogs? In years long past, if you were not a woodworker who could build bee equipment following any one of tens of plans, you contracted with a woodworker who could build them for you. You also cobbled up your own protective gear, improvised a smoker and if you wanted an extractor, go find a metal worker. We should not be so blasé about the one-stop-shopping offered by our modern day suppliers.

Old Bee Supply Catalogs

For a while, I tried to collect old bee supply catalogs. I mean how much demand could there be for them? Who of you has a 1985 *Lands End* catalog or a 1979 *L.L. Bean* catalog? If you don't have one, how much are you willing to pay for one? As it works out, people are willing to pay $25 $35 for a bee supply catalog that was free when it was printed if it is old enough or is from a company no longer in operation.

I wanted the old catalogs for their mapping of beekeeping's history and I wanted them for the dimensions they presented when describing equipment that is now obsolete. It was a rational, non-compulsive need by one such as I working for a university. As it works out, many of you want old catalogs for personal collections, so the demand for them is considerable. The competition has been too great so I gave up on my collecting efforts. However, before I stopped, I gathered some interesting pieces. The oldest I have is a 1907 Dadant Bee Supply catalog while the latest I have is the 2001 catalogs from everyone making bee equipment today. The old Dadant catalog I mentioned above had actual samples of both veil netting and wax foundation contained within the catalog. That is no longer done by current manufacturers ("He said with a chuckle.").

In 1909, Kretchmer Manufacturing Company issued the 95th edition of their Bee=Keepers' (sic) Supplies. They labeled themselves as the oldest bee supply house in America and published their catalog in German and English. They listed: the Massie Ventilated Bottom Board (to reduce swarming) in either 8-frame or 10-frame sizes, the Kretchmer "Lock Cap" cover, M-fences for comb honey production, metal-spaced Hoffman frames, Massie hives, Improved Langstroth *Simplicity* hives, hive hooks, and a LaReese Bee Escape board. None of these products are available today. Humorously, it required a one-cent stamp to mail the catalog.

In the early years, the catalogs listed beehives with frames, many kinds of smokers, comb honey equipment, extractors, one-gallon and five-gallon honey tins, wax melters and possibly a couple of books. Except for a plethora of advice on bee management, that was most of what the very early catalogs offered.

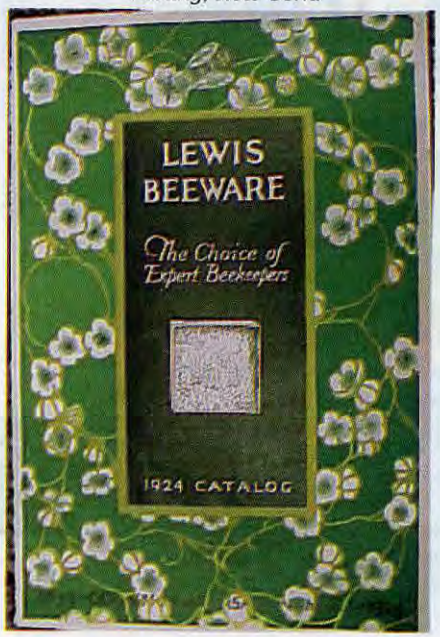
By 1935, all the surviving bee supply houses had a catalog that was around 65 pages long. The diversity of equipment was extravagant and prices were insanely cheap by today's standards. Currently, varying sizes determine the length of modern catalogs.

What's Gone, Changed, or New?

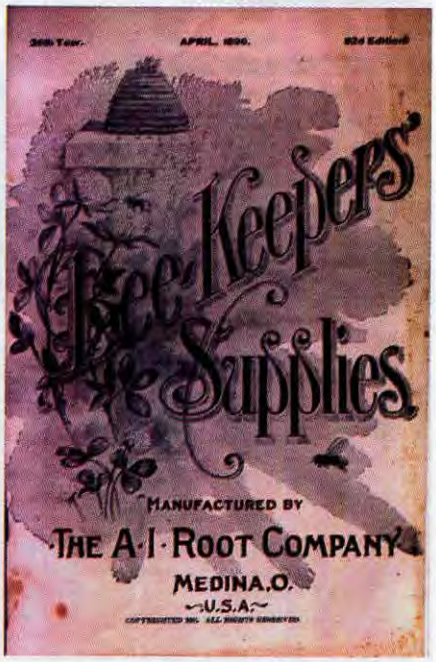
Comb Honey Equipment.

As I scanned the catalogs, a primary section that has changed is the equipment offerings for comb honey production. Gone are most of the various sizes of comb equipment, "N" supers, "T" supers, "M" fences and their requisite section boxes. Gone are the shipping boxes for "bulk frame" honey, but replacing these deleted inventory listings are Ross Rounds™ and Half Comb Cassettes. Though made of plastic,

The 1924 Lewis Beeware Catalog from Albany, New York.



The April, 1896 A.I. Root Bee Supply Catalog.



these devices are much easier to use than the older section boxes.

Galvanized Processing Equipment

Good riddance. All processing equipment now is stainless steel or plastic. All belt drives are concealed or variable speed DC motors are used. There's no lead solder used in manufacturing and the equipment is better made, lighter in weight, and more easily cleaned. Five-gallon cans weighing 60pounds when filled with honey and called "tins" are completely gone, replaced by plastic pails. No one offers the tin cans anymore. When I first began beekeeping, they were as common as dirt. I don't miss them. Plastic cans are more convenient and easier to clean.

Hive Equipment

Though interesting to review, most of the old designs of hives are long gone with all their clips, openings, vents, and slanted bottom boards (thought to cause wax moths to roll out). I would like to have specimens of these old hives for our bee equipment museum, but do I want these old hives back for routine use? No. Many of the old hives were made from one-inch dimensioned lumber and weighed nearly as much as a common automobile today. They were needlessly complicated in many cases. Many styles of insulated hives were offered for years, but all are gone now.

A 1910 dovetailed hive with an "Improved Higginsville" outer cover.

Have we lost a "perfect" hive somewhere in our history? No. Today's hives are a modern mix of wood and plastic. In fact, many expanded polystyrene hives are offered having no wood in them at all. Dadant lists the Insul-Hive™ and Plastiframes™. Betterbee list Styrofoam® hives. Are these hives better than wood? I don't know, but I do like curious people exploring different designs. Overall, I suspect we have as many hive style offerings as ever before in our bee history.

Foundation

Foundation types have changed, but foundation use – of some kind - remains a cornerstone of beehive management. Long gone is light and heavy brood foundation leaving us with only medium brood foundation for those of us still using basic beeswax foundation. Wired foundation is still around as is plastic-centered foundation. New to us are the many, many different types of plastic or plastic-augmented foundation. In some cases, such as Pierco frames from Brushy Mountain Bee Farm and others, complete plastic frames and foundation are offered. No assembly required. I miss the old days of the shop smelling of pine frames and beeswax foundation, but assembled plastic frames save so much time that their use cannot be ignored by many beekeepers.

Chemicals

Unfortunately, we continue to need an arsenal of chemicals. Suflaiazole (prevention of American foulbrood), carbolic acid[1] (Phenol)(for driving out bees, removing honey, requeening and robbing control), and ethylene dibromide (for wax moth control) are gone. There are too many other old chemicals to list here. Good riddance. But not to worry. We now have Terramycin® (for American foulbrood control), menthol (for tracheal mite control), CheckMite+™ and GardStar ™, and Apistan™ for Small Hive Beetle and *Varroa* control. Butyric anhydride and benzaldehyde are available for removing honey. To the chagrin of many of you, the chemical age of beekeeping is alive and well.

Queen Rearing Supplies

Though traditional queen cups and appliances are still offered in many instances, the avalanche of plastic contraptions for raising queens seems to change annually. Mini-mating plastic nucs are nearly more common than the old wooden nucleus hive. It appears that wooden queen cages will soon be as collectible as bee supply catalogs. I feel that these are good changes for many smaller beekeepers can now tinker with queen production without all the grafting needles, cell bars, and specialized hives.

Today's Catalogs

Today's catalogs are bright, well organized, and colorful. I had planned to place a page from an old catalog in this piece for your review, but there was so much verbiage that it made a bland and boring visual. However, any one single page from a modern catalog would have made a stimulating visual (or is it just what we are accustomed to seeing?).

Modern catalogs are replete with "1-800" numbers, www addresses, phone numbers, FAX numbers, and the basic surface address. What's next? Video catalogs on the web? It is certainly easier and quicker (but not cheaper) to buy bee supplies now than it was in years past.

Oddities

Interestingly, you can still buy: comb honey cutters, basswood sections, wax tube fasteners, automatic grafting needles, spur wire embedders, glass jars and metal tube candle molds. What will be gone from the 2020 bee supply catalogs that is there now? Obversely, what

[1] In 1968, A.G. Woodman sold Carbolic acid crystals to be used, "at your own risk." It was not approved by the USDA. Obviously, many chemical use regulations have changed also.

Continued on Next Page

CATALOGS ... Cont. From Pg. 37

will be in that future catalog that is not there now? I have no idea, but there will be additions and deletions.

Actually, We're in Good Shape

As I reviewed old catalogs while preparing this article, I did not find one – not one – item that we are at a loss for not having now. Most of the old styled hives are gone and we are left with the traditional wood hive (for the present time), but I didn't see an old styled hive in which I would want to put 200 bee colonies. We have lost a degree of "traditional" beekeeping, but 50 years from now, we will be seen as "traditional" beekeepers. Fifty years ago, traditional beekeepers were probably keeping bees in antiquated equipment. Everything changes.

For Your Beekeeping Enjoyment...

For your beekeeping enjoyment, I would definitely recommend getting all the current beekeeping supply catalogs. Their addresses are in this magazine. While many items are shared amongst the companies, there is still an amazing amount of diversity between the current companies. Beekeeping is a conundrum. It is simple but complicated. You get to choose how simple or how complicated. Either way, I expect you'll find beekeeping to satisfying and rewarding. BC

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

PACKAGING POLLEN

Ann Harman

Wow! Look at that! Just look at those colors of pollen coming into the hive. It is the time of year for many of us when spring flowers of all kinds are in bloom, offering their pollen to hardworking bees. The bees seem to be carried away with their pollen-collecting project—of course, there is much brood to be reared.

I am sure many beekeepers look at that incoming pollen and think that this is the year to collect pollen, keep some and sell some. Some beekeepers never get beyond those first thoughts. But some do and may well find that properly prepared pollen does have a market.

In this country pollen, as a food supplement for humans, has had a variable history. If beekeepers will remember back to the time when Ronald Reagan was President, pollen hit a new high in popularity. No, I don't think it made anyone who ate it President, but many who began eating pollen then are still eating it today. Neutraceutical is one of the buzzwords today and pollen may well fit into this category. As such, the popularity of pollen will not diminish, but rather increase.

Although we give bees credit for pollen, it actually is a plant product. By that I mean that the plant has created those vitamins, minerals, fats and proteins, as well as coloring matter and flavor. True, the bee makes some contribution. Nectar is added to the dry, dusty pollen which helps it stick together. Now the bee can manage the pellets. Now it is easy to take pollen pellets back to the hive and stuff them into a cell, about 18 of them per cell. Here a change does take place. However, the lactic-acid fermentation does not destroy any of the nutritive value.

In this country beekeepers collect pollen at the entrance to the hive, before the bees have stored it. In other countries pollen is collected both at the entrance and from the cells. Collecting from the cells is labor-intensive, however, much more so than installing a pollen trap and letting the bees take care of collection.

If you do decide to become a pollen collector this year you need to be aware of some of the problems. Pollen traps vary in design. Not very many types are on the market today. You will have to decide which one suits your needs best. Traps that allow hive debris to fall into the collected pollen will give you much more work to be done cleaning the pollen. Traps that admit rain may be impractical in a wet climate. Traps that do not easily allow for free flight mean more physical labor for the beekeeper. Whatever type you choose, be certain your bees are receiving the pollen that they need for themselves. You certainly do not want to diminish the population of your hives.

> *"Collecting pollen is only half the job. Selling it is the other half."*

Depending on the climate of your area, you will be collecting pollen from the trap as frequently as possible, daily is best. Pollen, as it comes into the hive, is moist. And all those nutrients in pollen make it suitable for mold growth, making pollen unfit for both bee and human consumption. Much of the United States has humid weather most of the Summer. Furthermore, in the spring, we have those wonderful April showers, as well as just plain rainy days. So perhaps you can see another reason why allowing the bees free-flight is necessary. Bees can fly in damp weather but pollen collecting can be a bad idea.

In order for pollen to be a product you can sell, you will need to dry it and clean it. Pollen can be frozen immediately after collection allowing you to accumulate a sufficient quantity to make drying and cleaning practical. If you are a small-scale beekeeper collecting from a few hives, your pollen cleaning and drying will be more labor-intensive than really large-scale beekeepers who can afford various drying and winnowing machinery. Whichever category you are in, you may consider that the premium price obtained from pollen sales makes the effort worthwhile.

To be a marketable product pollen has to have a number of attributes. The pellets should be dry, but not so dry that they are "hard as a rock." Generally a moisture content of about 25% is adequate to keep it from molding but still of a good consistency to chew. Pollen needs to be clean, especially of bee parts such as legs and wings. You are a beekeeper and are used to pieces of bees. Your customers want nothing to do with pieces of bees—or any other insect for that matter. Tiny, miscellaneous insects can crawl into pollen traps, not necessarily to eat pollen but just from blundering about. Be certain they are not in your final product.

Pollen needs to have a reason-

'A DAY IN THE COUNTRY'

JT & LAD ©'01

PACKAGING ... Cont. From Pg. 41

ably pleasant taste. Just like some honeys, some pollens are unappetizing because of a bitter taste or an unpleasant aftertaste. So taste your pollen collection, especially when the assortment of colors changes, indicating a new source. What can be done with bitter pollen? It can be fed back to the bees. Leave it stored in a freezer until needed. Or it can be sold to those companies who put pollen in capsules or mix with other materials.

Perhaps the most important caution is the danger of pesticides. If you live in an area where pesticides cause losses of colonies, you may not be in a suitable area for pollen collection. Contaminated pollen, brought back to the hive and stored, will either drastically reduce or kill a colony. Know the foraging area for your bees and any dangers lurking out there.

Now your pollen is dry, clean, tasty and ready for the last steps: packaging and marketing. What are the best containers for pollen?

It totally escapes me why a number of beekeepers put pollen in queenline jars to sell. The queenline style was designed for honey, generally a transparent liquid. Pollen sure is not that. Furthermore a teaspoon does not fit through the opening of some queenline jars. That fact certainly makes it awkward for the customer.

So look for a jar with a wide mouth that will show the pollen to the customer. Mid-Con, and some other equipment suppliers, sell a perfect jar for pollen. It is a straight-sided round jar and comes in different sizes from 1 oz to 2, 4, 6, and 9 oz. This range of sizes gives you great flexibility when you approach different outlets for your product. A large range of sizes means that you can offer your customers everything from "trial size" up to "family size." Since pollen is an expensive product, the range of sizes means that there are affordable sizes.

Unless you already have retail sales for your pollen, you are going to have to create outlets for your pollen. The range of sizes gives you a definite advantage. A somewhat reluctant retail outlet may wish to try only a few of the smaller sizes—to see if it sells. A shop, such as a health food store, may be more interested in the larger sizes since those customers may be more familiar with pollen. If you are selling your honey and wax products at farmer's markets, fairs, and craft fairs you can have several sizes of jars to tempt your customers. The one and two oz. jars make nice sample sizes designed to introduce customers to pollen. You can always use those for sample sizes of honey or a wax product such as hand cream.

> *"Like honey, don't sell bad tasting pollen."*

Now we come to an important part of marketing this pollen. The straight-sided round jar has wonderful possibilities for labeling. The shape of the jar means that it can be labeled with a horizontal rectangle or a horizontal oval. The proportionally wide cap is also territory for a label. Consider using a "safety" label, a strip that goes from the top of the jar down the side. One end of the strip has a decoration that fits the cap. This safety strip would be well-received in health food stores. In addition, it makes a nice presentation by adding color to the cap.

If you are using an assortment of small and of large sizes you may well need two or more different sizes of labels. Don't fuss. That label is what attracts attention to your product and is perhaps your most important sales tool. In order for your presentation to exhibit that it is a top class product, it must look top class. Remember—you are not paying for the label. Its cost, along with the jar and lid are paid for by the customer. However, only you know that.

What information should a pollen label contain? The requirements would really be the same as for honey. You can say just "Pollen" or you can use "Bee Pollen," or "Honey Bee Pollen." You, as producer, will have your name and contact information – address and/or telephone number. Next, but extremely important, you must put on the net weight. You have to determine the weight of pollen in the jar you are using. Just because the jar is advertised as "4 oz." does not mean it holds 4 ounces by weight of pollen, and pollen is sold by weight.

As far as colors on the label, you will need to take a look at the predominant color of your pollen. Usually you will have a mixture of medium yellows, oranges, and tans with perhaps a sprinkling of darker brown. Some seasons and some areas of the country will have cream-colored pollen, or a brilliant red-orange. A label with a white background would be suitable with the lettering in a strong red or orange. Black print is acceptable for net weight. So is a dark brown. Experiment with colors. You want the label to be uncluttered, especially in the smaller sizes of jars. You want your product to catch the eye of the customer.

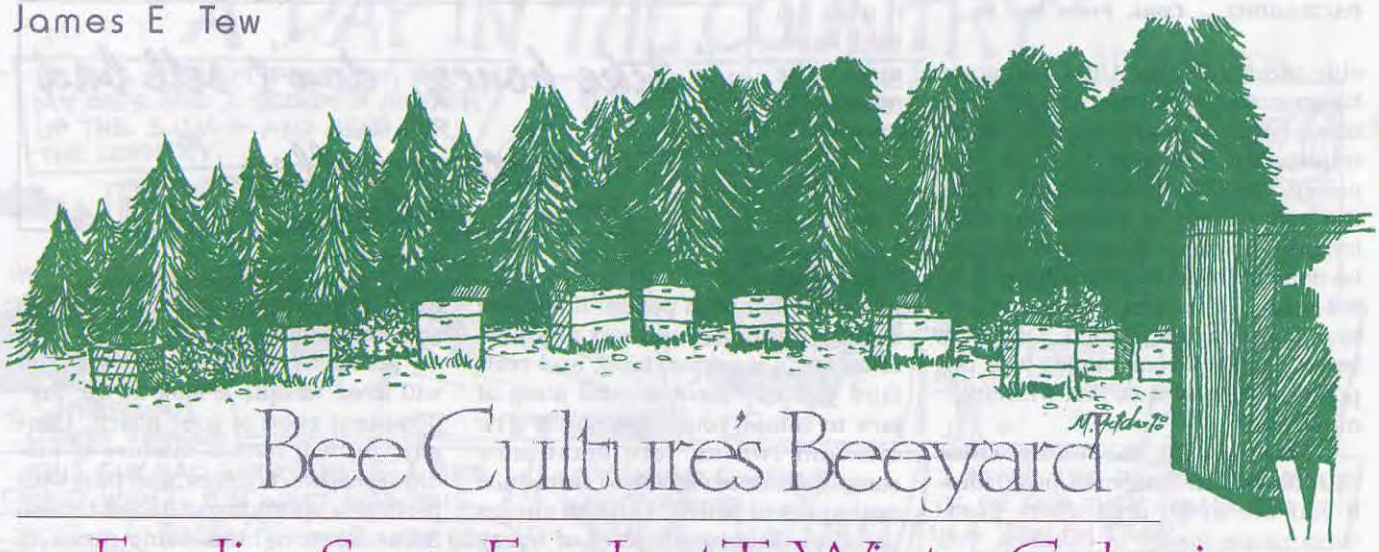
Keep yourself and your pollen on safe ground. Do not make any health claims on your label or to your customers. You can say your pollen is "Good." But you cannot say your "Pollen Is Good For You." That statement, and others claiming health benefits, cannot be used. A potential customer may well ask what benefits are obtained from eating pollen. You need to think about such questions beforehand and have carefully thought-out answers to them. *Make no claims.*

You have created a nice product—clean pollen—and placed it in appropriate jars with good labeling. Now you have to interest shops in your product. Health food stores, sporting goods stores and natural market shops are good places to start. Encourage the manager to try just a few jars. The demand for your pollen may well start out slow but those who use pollen in their diets usually continue to buy it. Pollen has become a part of their daily life.

This year take advantage of this rather small but profitable niche market. BC

Ann Harman is a sideline beekeeper and international marketing consultant.

James E Tew



Bee Culture's Beeyard

Feeding Sugar Fondant To Winter Colonies

During early February, I had the occasion to visit my hometown, Dothan, Alabama, in preparation for a Spring workshop at Auburn University. It was like being in a different world. Bees were freely flying. Pollen was coming in. Plants were greening up, and even a few flowers were blooming. Dandelion was here and there, and bush honeysuckle was coordinating with singing birds and blue skies to announce that Spring was rapidly approaching. Yet, I knew all too well that Winter had not loosened its grip on my bees back in Ohio.

Aside from the obvious weather difference, I was struck at how similar bee manipulations were in both warm and cold locations. The obvious advantage is that it is much easier to perform manipulations, such as colony feeding, in warm weather.

Our Alabama bees already had a brood cluster under way and were collecting pollen from early sources. The mice had already moved out. Bottomboards were reasonably clean. From all appearances, the bees were fully under way, headed for Spring.

In Ohio, we finally, for the first time in many years, had an "average" Winter – meaning it was cold and snowy. Many colonies needed feeding more than usual. However, my Dad's Alabama bees were very nearly through Winter, and guess what? Many of the colonies could stand some stimulative feeding. That was the point that struck me as ironic – warm and cold bees could both use some Winter-feed.

The Bain of Winter-feeding

Several of you have corresponded with me concerning Winter-feeding. Winter-feeding is essentially a last ditch-effort to save colonies that will probably die anyway – but most of us have to try something.

The problems associated with Winter-feeding – especially in cold climates – are that the bees can't get to the feeder and there is excess water in liquid feed. So why not feed solid food? That can be done. Occasion-

Improvised feeder rim on a 4-frame nuc.

Fondant Cake on a Wintering cluster.

ally, beekeepers pour granulated sugar on the inner cover around the handhold. Solid sugar cakes (fondant) can be fed also. You may recall that last month I tried feeding granulated corn syrup on a hungry colony. More about that later.

Feeder cans can be put over the inner cover hole. Empty comb can be sprayed full with sugar syrup. Of course the best feed is full frames of bee-processed honey, but if I had those, I would not be discussing these other feeding options.

What's the best way to Winter-feed? I don't think there is a best way. All Winter-feeding techniques, in cold climates, are desperate measures that attempt to correct errors that the beekeeper, the bees, or both the beekeeper and the bees, made last Fall. By far, by far the best procedure is to have enough food on the colonies ***before*** they go into hard winter.

Winter-feeding Specifics

If stuck with Winter-feeding, I prefer to feed when the bees are clustered. The bees are quieter, and you can get in and out more easily. On warm Winter days, cracking the colony open results in bees suicidally flying all about the vicinity with little chance of getting back to the hive. In all cases, your assistance should outweigh your disturbance.

The Winter-feeding procedure frequently kills bees. You just can't help but crush a few bees or trap a few bees out. I've found that trying to save all the bees results in more bees dying because I keep the colony open longer. Get in, install the feed (or feeder) as quickly as possible, and get out.

You're cold, too. The Winter beeyard can be a bleak place. The cold wind is blowing. You have gloves on, so you're more clumsy than usual. Bees alight on you because you're warm, so you get bees in the car. You get sugar syrup on your hands, so you get it on your car's steering wheel. You get bee poop on you. I'm struggling here to come up with anything enjoyable about Winter-feeding. If I may, I'd like to repeat myself, "By far, by far the best procedure is to have enough food on the colonies ***before*** they go into hard Winter."

Lazy Feeding

Due to everything discussed above and having some hungry colonies, I wanted to find an easier way to feed colonies (*as though no one had ever done this before ...*). Mixing syrup is a real pain. Feeding dry sugar does not always work well, and cooking sugar candy[1] is labor-intensive.

As I mentioned above, last month Dave and I took granulated corn syrup and piled it on a queen excluder which we then put on a hungry hive. The syrup was stiff and still had a lot of liquid in it. Yes, that liquid leaked onto the Winter cluster and made a bit of a sticky mess, but the colony did feed on the concoction. We made a quick observation that we should have foreseen. Feeding much more than a pound or so of Winter feed is for the beekeeper's convenience – not because the bees will take it that much faster. It makes some sense. Wintering bees cannot store the feed as they could if the weather was warmer. Rather they seem to feed on it as they become hungry and only keep their honey stomachs (their crop) full. In retrospect, Dave and I put much, much more feed on than the bees could take in a few days. Not great harm done, but the bees crawled over the sugar cake, defecated on it, got sticky, and were just generally messy. Back to the drawing board.

Feeding Fondant

My comments here are not recommendations. Remember I said that last month when I discussed feeding granulated corn syrup. We are still learning as I discuss the following procedure. For all I know, the bees may still all die, but at least we tried.

Some of you with very long memories may recall that I have been tinkering with Wintering four-frame nucs. Why? I could make splits in the Fall from strong colonies, Winter them over and have early splits – headed by new queens – for the upcoming Spring season. It works on paper, but the beeyard is a different story. We have tried the variations of Wintering singles, with no insulation; Wintering duplex 4-frame nucs; wintering duplex nucs on top of full-sized colonies; and wintering groups of singles underneath expanded polystyrene insulation. No great surprise that of the 20 or so still alive, most are in the insulated groups. I will refer to this project later in the Spring.

So, we finally had a true Winter, and the four-frame nucs could really stand some supplemental food. The clusters are small and are just beneath the cover. No sneaking in and out here. Open the hive and they know it – immediately. I improvised the following procedure.

I called my local baker and explained that I wanted a product much like the white cream in Oreo Cookies™. To my surprise, he had a suggestion. It is Karp's® Fondant for Icing (Product #137). We bought a 50-pound block for less than $30. It is apparently made of high-fructose corn syrup and invert sugar syrup. There were no other additives. It is divinely sweet. It is also thick and requires some elbow work to cut plugs of it. We put

Empty wax paper after bees have eaten all the Fondant.

Continued on Next Page

[1] Collison, Clarence. 1992. Sugar Candy Recipe. In *The Hive and The Honey Bee*, Dadant and Sons, Inc., Hamilton, IL Page 637

Two nearly consumed patties. Note: Don't confuse the white plastic frame near the cluster with the uneaten Fondant.

A Fondant cake on the handhold in the inner cover.

on about a pound at the time. It tends to crust over within a few days, so the bees need to take it expeditiously. I don't know if it can be softened with water after it hardens.

I built rectangular frames ¾-inch thick with wide end bars for support. Otherwise, the sugar cake would hold the outer cover up on the nucleus colonies. We pressed the one-pound cake flat and laid it over the cluster.

The sugar cake was put on top of the frames and covered with wax paper. Bees seemed to move onto the cake readily. We found that the fondant softened some, but in general it kept its shape and did not ooze between the frames.

On full-sized colonies, the same procedure worked well but without the need for a feeder rim. We simply turned the inner cover to the deep side and put the fondant cake underneath it.

Without causing as much confusion, we placed fondant cakes near the inner cover handholds and got good results there also. This location, though probably not as good as being directly on the cluster, was easier and quicker to position.

No Illusions

I have no illusions that this procedure will change commercial beekeeping feeding techniques. This is a (potentially) lazy way to adequately feed a few hungry colonies – during any time of the year. I like the procedure because:

1. No feeders are required.
2. No mixing is required.
3. It is a highly sweet fondant.
4. It's fast.
5. It's somewhat cheap.
6. Bees readily take the feed.

I don't sense that the bees will be any better off for having been fed this formulation rather than feeding on more traditional mixes. I also realize that we are not out of the woods with these lightweight colonies. But for the present, these colonies are still alive. Just another Winter in the BC Yard. BC

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

?Do You Know? Answers

1. **False** Skunk cabbage is one of the very first plants to bloom as frost is leaving the ground in the Spring, and its principal value to the beekeeper comes from this early appearance. Skunk cabbage provides an early source of pollen, not nectar.
2. **True** All commercial varieties of sweet cherries are self-unfruitful so mixed plantings of compatible varieties are necessary (cross-varietal pollination). Honey bee colonies should be brought into the orchard on or before first bloom. Pollination of sweet cherries must take place very soon after the flowers open so delay in providing bees can seriously lessen production.
3. **True** Several studies have shown that the nectar from apple blossoms is typically higher in sugar concentration than that found in pear blooms. Because of this difference in sugar concentration, it is difficult to get adequate pollination in pear orchards. Honey bees visit pear blossoms primarily for pollen. The nectar is low in sugar, bitter and unattractive relative to other fruits.
4. **False** *Varroa* mite reproduction is tied directly to having brood in the hive. Thus, we would not expect to have high numbers of *Varroa* mites present in the Spring of the year following a broodless period in the Winter and having treated the colony in the fall. The largest varroa mite populations would occur after a colony had high levels of brood production; late Summer, early Fall.
5. **True** European foulbrood and chalkbrood are often considered to be stress diseases and are usually most prevalent in the Spring when the broodnest is rapidly expanding and rearing conditions are marginal. Nosema is also most prevalent in the Spring since colony confinement during the Winter encourages disease buildup.
6. **False** Treating colonies with Fumidil-B is normally done only in the Fall, not in the Spring. For optimal nosema control in over-Wintered colonies, initial infection levels should be reduced in early winter. Treating colonies with sugar syrup containing Fumidil-B in the Fall delays the initial buildup of any infection from Winter confinement.
7. **False** Carniolan, not Caucasian honey bees are known to have good Wintering abilities even under hard conditions resulting in quick Spring buildups. As a result they have a strong tendency for swarming, as well.
8. **True** European foulbrood rarely kills the colony. It weakens it, spoiling it as a productive unit, but the colony generally survives from season to season. The disease has an annual cycle, being most prevalent early in the Spring when the brood nest is rapidly expanding but brood rearing conditions are not ideal.
9. False Chalkbrood affected larvae are normally found on the outer fringes of the brood nest where sufficient nurse bees are unavailable to maintain brood nest temperature.
10. B) Dandelions
11. E) European foulbrood, American foulbrood
12. European foulbrood disease
13. bacteria
14. nurse bees
15. parasites
16. Bait hives
17-18. glucose and fructose
19. Dead colonies should be closed up and removed from the apiary as soon as possible. Failure to follow this recommendation could result in the spread of disease when the combs are robbed out. Leaving the colony in the apiary or improper storage of the equipment will result in molds growing on the combs and honey that remains may absorb moisture and ferment. The dead, rotting bees may also damage the combs.
20. Equalizing the strength of your colonies in the Spring is an important management consideration. Weak colonies remain weak for long periods of time and often fail to produce a crop of honey. Extremely strong colonies in the Spring have a strong tendency towards swarming thus often fail to become productive colonies. Equalizing the strength of your colonies will help reduce the incidence of swarming and will aid the weaker colonies in building up faster. Having all colonies similar in strength will mean that all colonies in the apiary will be ready for a given manipulation at the same time, such as supering. Total number of bees in the apiary is likely to increase since every queen is laying to her capacity; not restricted by congestion in the broodnest or having only a small number of nurse bees to feed her or care for the brood. In the long run, less time will be needed in basic management when the honey flow begins.
21. Potential of picking up spores associated with bee diseases, especially American foulbrood.

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

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

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

INNER ... Cont. From Pg. 8

ing of your own, as a label on your candle boxes, or as a sticker on the candle itself. The label should convey the same information – to prevent fires keep all candles in sight, away from children, pets and anything that can catch fire.

Yes, it's an added cost of business. But I think it's smart to protect stupid people from themselves.

•

In early March each year a small county group in northeast Ohio holds a one-day workshop meeting, as do hundreds of other county groups that time of year. The date is as special, and as predictable anywhere people keep bees. Early Spring everywhere bee passion runs like maple sap – fast and loose. But at this particular meeting in Ohio it runs higher, and hotter than anywhere I know of.

I've been attending this particular meeting most every March for the last 15 years, though I've missed a few along the way. A couple of years ago I passed on comments on the evolution of this meeting, and the people I've watched there. Parents came with their then adolescent children, who grew and now they bring their own children. And lots of the regulars there every year, some who have gone from rank beginner to seasoned pros, with two or 20 colonies. Others have stayed the same, those two or 20 beekeepers, but have striven to keep up with the ever-changing challenge of how to keep bees. Every year there are familiar faces and new faces, and the parade of people and personalities is far more entertaining than anything Macy's could hope for.

And every year the attendance has grown, the complexity of the program has grown and the quality of the information has improved. The vendors attending this gathering have steadily increased too. This year there was a big jump in the number of tables filled with the things beekeepers want and need.

The one thing that hasn't changed is the space all these people fill. There's an auditorium that holds 1,000 people comfortably, a make shift eating area and a meeting room that holds 250 or so, and three other classrooms that hold, uncomfortably, a 100 or so each.

Promotion for this meeting is pretty intensive, I'll admit. They have a mailing list they send the preregistration notice to that reaches most of the 3,000 or so beekeepers in Ohio and many in nearby states. This list is generated from previous attendees, association lists and registered beekeepers.

A core group in the association does most of the planning with lots of input from the group at large, selecting the keynote speaker and workshop topics and speakers. They rely on previous year's evaluations *religiously collected* and topics of concerns that have come to the fore since the last meeting.

Sherry Ferrell and Dave Heilman who work at the Bee Lab at the Ohio Agricultural Research and Development Center with Jim Tew are the contacts between the group and the facility hosting the meeting. Leona Horst and Sue Shippitello are the group leaders, and the four work together to put this all together.

Preparations include a multitude of projects and an army of volunteers who set up tables and chairs, identify rooms, prepare program folders, decorations, contact vendors, solicit door prizes, find and organize speakers, make AV preparations. The list is long.

This year the mailings went out and 500 people preregistered. Yes, 500. On the morning of the meeting they all showed up, and another 211 people who hadn't preregistered showed up. The registration line snaked around the lobby, went out the door, down the steps and almost reached the street outside.

Diana Sammataro was the keynote, followed by a host of workshops, mostly taught by locals. Nobody famous, really, was on the rest of the program, just regular people talking about keeping bees. A beginners class, seasonal management, wax works, new products, splits and divides, cooking with honey, queen rearing, honey plants, pests and diseases . . . nothing special here . just the regular stuff.

I can't fully explain why 711 people showed up for a one-day workshop meeting. But I have a few ideas, and for what it's worth here they are.

- No politics. No government programs. No write-your-congressman speakers.
- Beekeeping. Beekeeping. Beekeeping, and more Beekeeping.
- Fundamentals for beginners.
- Advanced topics for experienced beekeepers.
- Good doughnuts and coffee, all day.
- Lots of vendors, both national and local.
- Inexpensive, but *profitable* registration fees.
- Timely topics for workshops.
- Lots of break time, lots of socialization time.
- Long lunch break, good food.
- Lots of parking.
- Door prizes galore and substantial raffle prizes.
- Exceptional *local* promotion.
- Perfect and early preparation with facilities, speakers, meals and vendors.
- Finally . . . good weather.

My hat's off to all those who put this together. It was a joy to attend, and I am honored to have played a small part in it.

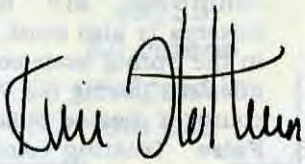
Now, look at the number . . 711. No group I'm aware of has reached that number in years and years. Why not? Why is a small county organization able to reach out and touch that many people? Certainly the National Groups are political organizations. Enough said. EAS and large state groups have a cost factor that enters in, but many routinely draw a few hundred people.

You want beekeepers to attend your meeting? Have a meeting for beekeepers. I don't care whether you are a small county group or a national organization – focus on how to keep bees. Period. That's why people start up – they want to keep bees . . . alive and producing.

Keep politics separate. Take good care of the people who come. Most of us, for those of you who plan meetings, just want good information on how to keep bees . . alive and producing.

•

Things are blooming all over right now, so get to work . . . the bees are ready . . . are you?



Richard Taylor

Bee Talk

"If I were younger I'd find a couple acres and become an urban farmer."

There has emerged a new and fast-growing development in agriculture which I think holds great promise for sideline beekeepers. It is the rise of small specialty farms, sometimes referred to as regional agriculture, or sometimes as urban farms. I'll explain what they are, why they are proving to be so successful, and why they are of interest to beekeepers.

First, though, note the vast changes in agriculture since the last world war. Family farms have nearly disappeared. They have been overwhelmed by corporations engaged in large-scale farming and by urban sprawl. Fields far and wide are leased to these corporations which, with vast and expensive machinery, produce virtually the entire agricultural product of this country. Imports have also increased greatly, reducing still further the role of the farmer. Melons, for example, that were once seasonal, can now be found in the supermarkets year-round, produced in warmer climates on a large scale. The same is true for most of the produce you see. The U.S. Department of Agriculture estimates that the distance between the fields where foods are produced and the tables where they are consumed averages about 1,500 miles. And that means that the total energy needed to transport it is about eight times the amount of energy in the food itself. What a loss! And now, add to all that the enormous use of pesticides, hormones and, more recently, the growing development of genetically modified produce, the ultimate effects of which, on health and the environment, are still unknown.

All this has created a place, or indeed, a golden opportunity, for the small, specialty farms. They are typically very small – only one to 20 acres – and very often they are located right in the city, alongside the strip malls and everything. And the secret of their success is the unique form of marketing that some of them have developed, something that I have witnessed firsthand.

Here is how it works.

These small-time, and in fact sometimes part-time, farmers specialize in organic produce, free-range eggs and so on. So right away they meet the needs of the wise consumers who have deep and justified misgivings about pesticide contamination, genetically altered food and hormone-laden food. They no longer have to just take what is offered in such abundance in the supermarkets. The urban farmer has, ready and waiting, a large market for his produce, and he need not fear competition from the agribusinesses. These can drive down prices, to be sure, but they cannot offer the kind of food that comes from the urban farms.

Second, the urban farmer's market is close by. Instead of being shipped 1,500 miles, the produce is consumed right nearby. It is fresh, and transportation costs are minimal.

Third – and this is the most innovative aspect of the whole approach – some of these urban farms have developed what is called a share system of marketing. It works this way: Customers pay for their produce *in advance*, that is, at the beginning of the growing season, by buying their share. A large family will purchase a full share, for maybe $400 or $500, and a small family, of perhaps only two people, will buy a half share. Then, as the season advances and the produce begins to be harvested, these customers go once a week to the farm to get their share. The produce is set out on long tables, perhaps in a large cooler, and signs indicate that day's share. For example, at the tomatoes the sign will read "Full share six tomatoes, half share three," and at the lettuce "Full share two bunches, half share one," and so on for each different product. The customers go around and help themselves, following the instructions on the signs. Potatoes and the like are sold by the pound – whatever works best.

Now the great advantage of that, in case you haven't noticed, is that the farmer has the produce sold in advance. He or she knows what it will bring and is not at the mercy of the marketplace. There is no fear of delivering produce to a market, only to find that agribusiness has gotten there first, ready to take a price below what it has cost the urban farmer to produce the crop. And the customer wins, too, by knowing that the produce is fresh and of the highest quality, to say nothing of the better flavor. Children, sometimes averse to eating vegetables, now find that they are delicious.

Of course the farmers are not limited to this kind of marketing. They can still take their produce to the farmers' markets that have become so popular in the last few decades, and to other outlets that guarantee organic methods of production.

Now, then, where does beekeeping fit in to all this?

Well, the sideline beekeeper is in somewhat the same position as the family farmer. He cannot compete with the big commercial outfits that number their colonies in the thousands and move their bees around in huge trucks. And the sideliners have a made-to-order outlet

Continued on Next Page

BEE TALK ... Cont. From Pg. 51

of the sort just described, provided they are willing to produce honey without the use of chemicals or pesticides. People who are serious about organic food are great users of honey, often buying it by the gallon. And the urban farmer, who is already highly diversified and doing everything on a small, manageable scale, can himself be the sideline beekeeper.

I have thought about all this quite a lot lately, and more than once I have wished I were younger. I think I would find a couple of acres of very fertile soil and become an urban farmer-beekeeper. I'd have not only all the joys of beekeeping, but the deep satisfaction of tilling the soil and bringing forth its bountiful yields. And, to top it all off, I'd have a respectable income from it all. My riches would not be in gold, to be sure, but they would nonetheless be real and plentiful.

Richard Taylor is a philosopher and lifelong beekeeper who lives in the Finger Lakes region of New York. He is the author of several beekeeping books.

Q & A?

Reverse Or Not?

Do you recommend reversing brood chambers in the Spring?

J.B. Barrett
Gaston, IN

Yes, if you have time. It retards swarming and helps expand the brood nest, but it does not prevent swarming.

Foundation Only

Can package bees be installed in a new hive with only foundation, no drawn comb? Will the bees get the foundation drawn by the time the queen is released from her cage?

Marty Hunter
Cadiz, KY

Yes, package can be thus installed, and you can even release the queen from her cage and into the cluster of bees at the time you install them, taking care that she doesn't fly off. The bees will begin to draw the foundation at once and the queen will begin egg laying within a few days. It is important, however, to feed the bees sugar syrup, enabling them to draw the foundation quickly. Restrict the hive entrance to only an inch or less until the bees are well established, which will take a week or more.

Crowding Bees

My hives consist of a standard hive body plus a shallow, with the shallow on the bottom. Should I reverse these prior to putting on the comb honey supers or should I remove the shallow altogether to crowd the bees into a single hive body?

Kevin Ormerod
Lexington, SC

It is always a good idea to reverse, if you have time, as a means of forstalling swarming, but since this only discourages swarming, temporarily, without preventing it, it is doubtful whether it is worth the trouble. As for crowding down to a single story, I do not think so. You would have to decide what to do with the shallow super, probably with brood and honey in it. The one-and-a-half story hive works fine, for comb honey, without further reducing.

Grease Patties?

The bees seem to ignore the grease patties I put on the top frames. I used one part Crisco and two parts sugar. How come? How do these grease patties work?

Fillmore Emerson
Forest Hill, CA

Grease patties should be mixed at about three parts sugar and one part shortening, by weight, and should be placed on the top bars of the brood nest, as you appear to have done. The sugar is simply to attract the bees. It is not necessary for the bees to consume the patties, although they normally do, in time. The grease rubs off in minute amounts onto the bees, tending to repel the tracheal mites. They have no effect on *Varroa*.

Cleaning Obs. Hives

How does one deal with the propolis that gets plastered on the glass or Plexiglas sides of an observation hive?

I have received several solutions to this problem, which appeared in this column several months ago. One reader suggested wrapping the glass with plastic wrap that is used for wrapping foods. Another noted that WD-40 can be sprayed on the propolis, left a few minutes to soak in, and then gently scraped away. Now still another solution comes from Mr. Ed Mabesoone, in Florida. He says to put any parts encrusted with propolis in a freezer for a few hours, after which both propolis and wax can be easily removed with a plastic scraper.

Dead Hive W/Honey

What can you do with honey that is still on a hive that died over the Winter?

Jim Lowe
Elizaville, NY

If it has granulated, give it back to the bees, putting it under the brood chamber. They will clean it out and use it. If it has begun to ferment, give it back to the bees. If you extract it, then check it carefully, right at the start, to make sure it is okay in terms of flavor, thickness, etc.

How Many - 9 or 10?

How many combs should you have in the brood box? Nine or ten? I read that nine makes for easier manipulation and less chance of crushing the queen, but I have also read that the bees create their own bee space, so that even with only nine, the combs end up just as close together. Would not 10 combs provide more space for brood rearing?

Robert Sorensen, Jr.
MacDougall, NY

I have always found nine makes for easier manipulation once the frames become propolized. It is true that, with only nine frames, the bees make the combs a little thicker, so the space between them is the same with either number, and it is also true that 10 combs provides more room for brood rearing; but if you have two-story hives then you have plenty of room for brood rearing with only nine combs in each. My recommendation: Start with 10, then reduce to nine after combs are drawn. (You cannot go from nine back to 10 – combs are too thick.) For extracting supers: Start with nine, carefully spaced, then reduce to eight, carefully spaced, for ease of extracting.

Combining Colonies

I plan to make up some five-frame nucs this Summer with good young queens. When these are accepted can I combine the nucs with the hives I want to requeen, using the newspaper method, and expect the new queen in the nuc to displace the old one, or do I need to find and remove the old queen?

Ken Saylor
Jonesboro, TN

I think it is a much more reliable method to remove the old queen, rather than to assume that this is the queen the bees will depose. If any reader has good and reliable data on this, based on experimentation with marked queens, I would like very much to hear about it. It is an important question, and the answer should be known. Of course the great advantage of simply combining the nuc without searching out the old queen is that it is much, much easier.

Questions are welcomed. Address: Dr. Richard Taylor, Box 352, Interlaken, New York 14847 enclosing a stamped envelope for response.

Guest Editorial

NATIONAL HONEY BOARD

As a commercial beekeeper and honey producer, I am concerned that a great deal of misinformation about the National Honey Board continues to be printed. I have been a member of the NHB since June 1998, as Producer Region 1 representative, however, these comments are my own and not those of the National Honey Board.

The "Viewpoint" by Kevin Roberts and portions of the "Inner Cover" (pertaining to the National Honey Board and generic promotion) in the February 2001 issue of *Bee Culture* are recent examples of misleading information. Both articles mislead the reader to believe that the National Honey Board is only concerned about generic honey promotion. This is absolutely not true. NHB funded varietal research and consumer education has increased significantly since 1997 when the Board decided to place a greater emphasis on "honey and health." The NHB websites (www.honey.com and www.nhb.org) will soon have a "honey locator" where consumers can find sources of local, regional, or varietal honeys. US honey producers who pay assessments of at least sixty dollars annually can be listed on the site free of charge.

The 2001 National Honey Board varietal calendar lists and describes different honey varieties each month and suggests a visit to the Honey Board website for further information. NHB brochures and media releases frequently refer to the fact that the color, flavor, and other attributes of honeys are determined by the type of flowers visited by the bees, and often, specific varieties are described.

Another example of the Board's efforts to spread the word about honey varieties occurred last summer, when, for a second time, the NHB co-hosted (with the California Strawberry commission) an event for corporate chefs at the Culinary Institute of America in California's Napa Valley. Chefs from Red Lobster, Outback Steakhouse, Marriott's, Walt Disney World, Starbucks, and many others tasted and prepared recipes using a number of different US floral varieties of honey. These were gourmet chefs sampling and using gourmet US honey varieties.

Since the Honey Board shifted emphasis to "honey and health," it has become increasingly evident that honey varieties vary significantly in ways other than flavor, color, mineral content and other characteristics, which have been recognized for years. The NHB is funding research to determine anti-oxidant and anti-microbial properties of US produced honey varieties. Producers of manuka and jellybush in New Zealand and Australia currently receive about $10 per pound (US$) for these honeys, which are used as medicine. It is hoped that the NHB funded research will discover that some of our US floral varieties possess high anti-microbial activity.

It is obvious that the National Honey Board is not ignoring US floral honey varieties as alleged in the "Viewpoint" and the "Inner Cover."

Mr. Roberts believes that a new industry board is necessary and it should be funded by an assessment on gross beekeeping income. Let's discuss the initial goals of the new board as envisioned in the Viewpoint:

Labeling varieties – Neither a new board nor the NHB can label anyone's products for them. It is the decision of individual sellers as to how their products are labeled.

Gourmet promotion of varietals – The NHB continues to address varietal promotion in a number of ways, including as a gourmet food.

Labeling honey by proportional country of origin – Legislation (lobbying) would be required to implement such an idea. Research and promotion boards like the NHB are prohibited from lobbying.

Honey bear logo ads –Currently the NHB is revamping the service mark program and plans to have a new program in place soon. The old program was misused by some in the industry and the NHB plans to develop a new, more enforceable program.

Health – The NHB has focused on "honey and health" since 1997 and continues to conduct substantial research on honey varieties in order that they may be used as functional foods and/or medicine for humans or animals.

Drum sales and co-ops – The NHB Marketing Kit is a good tool for producers who wish to sell their honey in any size container, including drums. The NHB can help producers locate government requirements for starting new co-ops.

The importance of crop pollination – As mentioned in the "Viewpoint," the NHB funded the late Dr. Roger Morse and Dr. Nick Calderone"s updated study, "The Value of Honey Bees as Pollinators of US Crops in 2000." This is a priceless public relations piece, which has been used extensively by industry members in recent EPA/pesticide, ag appropriations, farm bill, and other discussions with government officials. The study has been publicized in the national beekeeping publications, other ag and non-ag media, is available in its entirety throughout the world on the A.I. Root website, and can also be accessed through the NHB industry site www.nhb.org.

The National Honey Board has changed a great deal since it began operations in February 1987, and I believe these changes have improved the NHB significantly. The NHB is constantly evolving in order to better serve the US honey industry. With regard to the issues which I have addressed, I believe changing to a new board as outlined in the "Viewpoint" would be change without improvement.

Gene Brandi, Beekeeper
Los Banos, CA

GLEANINGS

APRIL, 2001 • ALL THE NEWS THAT FITS

7% Tariff Goes On

ARGENTINE HONEY

Domestic honey producers applauded the March 6 announcement by the Department of Commerce that imports of honey from Argentina will now be subject to a 7% tariff upon arrival in the U.S.

The preliminary determination by Commerce is intended to offset the benefits granted to the honey industry by the government of Argentina through various subsidy programs that Commerce has found in violation of U.S. and international fair trade rules. The 7% tariff, known as a countervailing duty, will be calculated based on the total value of the honey imports as they come into port.

Commerce began its investigation September 29, when representatives of the U.S. honey industry filed a formal unfair trade action charging Argentina with excessive government subsidization of its honey industry. According to the petition filed by the Amer. Honey Producers Assn. (AHPA) and Sioux Honey Association (SHA), this action by the government of Argentina resulted in market distortions that materially injured the U.S. honey producers.

"We are delighted with Commerce's finding the government of Argentina has unfairly subsidized its honey producers," said AHPA President Richard Adee. "The imposition of offsetting duties on new imports of honey from Argentina will help bring the U.S. market price for honey up to where our members can again make a profit."

Sioux President Jerry Probst echoed Adee. "Our association and members are gratified by Commerce's preliminary decision on Argentina's unfair subsidy practices. These practices enable their honey producers to dominate our market with below cost pricing. We are counting on the U.S. government and our unfair trade laws to save this important American industry," said Probst.

Commerce will begin the final phase of its countervailing duty investigation, which will result in the issuance of a final duty. Concurrently, the International Trade Commission will begin the final phase of its injury investigation. Typically, final determinations from both agencies are issued 12 to 14 months after original filing.

In the same unfair trade actions, AHPA and SHA charged Argentina and China with shipping huge amounts of unfairly traded, low priced honey into the U.S. market, a practice known as "dumping." Commerce will issue its preliminary determination in dumping investigations by May 4, 2001.

At the annual New York Winter Archbold Biological Research station meeting in Lake Placid, Florida. Mary Lou was presented with a plaque honoring her for her dedication and work for the bee industry for over 50 years by Paul Cappy, presiding over the meeting.

AAPA Award

HYGIENIC TRAITS STUDIED

Each year the American Assn. of Professional Apiculturists (AAPA) presents student awards, one, the Student Scholarship is for outstanding research; the second, the Student Paper Award is for the best student presentation at the American Bee Research Conference (ABRC). This year the ABRC was held in conjunction with the American Beekeeping Federation in San Diego, CA, January 11-15, 2001.

This year both were awarded to Miguel Arechavaleta-Velasco of Purdue University. Miguel is currently a PhD student under the guidance of Dr. Greg Hunt. Miguel was born in Mexico City, Mexico. After graduating from the Autonomous Metropolitan University in Agronomy he operated his own business for queen breeding and honey production. Subsequently he taught apiculture and genetics then achieved his MS degree, guided by Dr. Ernesto Guzman-Novoa. Miguel moved to the U.S. in 1998. He is currently working with honey bee molecular genetics, mapping quantitative trait loci that influence the expression of guarding and hygienic behaviors. His wife, Carmen, is also a graduate student at Purdue. Miguel enjoys amateur radio, fishing and mountain climbing.

The AAPA Scholarship Award was based on his work on honey bee genetics. Miguel continues to be investigating the genetic makeup of bees who exhibit hygienic behavior by uncapping and removing dead pupae from the hive. The DNA of the bees exhibiting hygienic tendencies will be mapped. Information gained from this work has future application in breeding programs. Hygienic behavior is a highly desirable economic trait that could contribute to reduce the negative effects of diseases and parasites and could diminish the amount of chemical products that are used for their control. This research work was also the subject of his presentation at the ABRC.

NHB Online Guide

FIND YOUR HONEY

Beekeepers and other interested honey industry members are invited to sign up for a listing on the Honey Locator – the National Honey Board's online guide for families, chefs, manufacturers and others to find sources for local and specific floral varieties of U.S. honeys.

"As honey producers know, there are remarkable differences in honeys based upon production region and floral variety," said Julia Pirnack, industry services director for the National Honey Board. "The Honey Board created the Honey Locator to help educate consumers about the multitude of different floral sources and flavors of honey available and to make sure that they can find the honey they want."

The Honey Locator is a search engine that is connected to the National Honey Board's Web sites (www.honey.com and www.nhb.org). More than 8.5 million people visited these Web sites last year and even more are expected to visit the sites in 2001 as the Honey Board publicizes its new Honey Locator.

To list your company and honeys on the Honey Locator, just call 888.421.2977 and press number 5 or visit www.nhb.org for a Honey locator Listing Request form. If you paid at least $60 in assessments in 2000, you are eligible for a free listing. (If not, you must pay a combined assessment/ fee of $60).

WI HONEY QUEENS

The Wisconsin Honey producers Association is proud to announce that Kia Martin and Sarah Welch have been named 2001 Wisconsin Honey Princesses. Kia is the daughter of Dennis and Cindy Schmidt of Greenfield. She is a 16-year-old sophomore at Whitnall High School where she is active in the school band, stage crew, drama and soccer. Sarah is the daughter of Robert and Jeanne Welch of Redgranite and the granddaughter of Henry Piechowski also of Redgranite. She is a 16-year-old sophomore at Wautoma High School where she is active in the school band, choir, and theater programs. She is a youth leader for the local children's theater program, and a volunteer tutor at the elementary school. She has participated actively in 4-H on the local and state levels. She is the current president of her 4-H club and serves as an ambassador for statewide events and workshops.

Sarah and Kia will spend 2001 promoting the beekeeping industry throughout Wisconsin. They will be promoting the honey industry at county fairs, and the Wisconsin State Fair. They are available to give presentations in schools, club meetings (service clubs, homemakers, etc.), and appear at events such as festivals and parades.

Sarah Welch, left and Kia Martin

USDA MOU

TESTING FOR T. MITES

A new commercial testing service could be on tap this summer to help U.S. honey bee breeders check their colonies' mettle against parasitic tracheal mites, *Acarapis woodi*.

Under an agreement called a memorandum of understanding (MOU), Agricultural Research Service (ARS) entomologists have provided Edwin Holcombe, a Shelbyville, Tenn., beekeeper with the scientific expertise necessary to commercially test at least 15 breeder colonies from 10 clients on a first-come, first-serve basis. A similar operation in Ontario, Canada, has helped the industry there cut the mite-to-bee ratio from 13 mites per bee to 1.5. Currently, no such service exists in the United States, notes Robert Danka, with ARS's Honey Bee Breeding, Genetics and Physiology Laboratory in Baton Rouge, Louisiana.

The testing service will incorporate techniques Danka and a colleague, ARS entomologist José Villa, used to characterize mite resistance levels in 83 breeder colonies managed by eight commercial queen bee breeders in Hawaii, California, Texas, Louisiana and Virginia. Specifically, they tested young worker bees from the breeder colonies and compared them to bees from colonies known to be either resistant or susceptible. The variability was surprising: Of the surveyed colonies, two- thirds were mite-resistant, while one-fourth were clearly susceptible.

Holcombe, owner of Backwood Apiaries in Shelbyville, spent the past year perfecting the researchers' mite-testing protocol. Danka and Villa will test Holcombe's skills before certifying his proficiency.

NEW ZEALAND PLANS VARROA STRATEGY

New Zealand's varroa planning group has agreed that New Zealand needs to prepare for the eventual spread of the mite and that a range of management options will be needed.

Ministry of Agriculture officials met industry leaders including representatives from the National Beekeepers' Association, Zespri, Federated Farmers, the Fruitgrowers' and Vegetable Growers' Federation and regional councils to discuss long term measures for managing the impact of the *Varroa* bee mite.

The government previously approved a NZ$7.6-million package of measures to be used over the next two years to help slow the spread of the mite and reduce its impact in the short term.

This meeting discussed options needed for a long term response to the disease and considered a range of different scenarios for mite spread during the next two years. These ranged from the mite being restricted to the upper North Island, to complete spread throughout both islands.

The group agreed that If regulatory powers were required, the most appropriate way to access them was by a pest management strategy using the Biosecurity Act 1993.

This is the winning limerick from The Bee Masters Course held in Canada. Dewey Caron, Don Dixon and Adony Melathopolous were the judges.

The queen was all of a go-go.
But her first maiden flight was a no-go.
The drones tried again
And again and again,
And now she's a honey jar logo.

by Mike Green

And So Does Corn Pollen

CORN PRICES DRIFT

The StarLink controversy has yet to wind its way out of the corn markets, as decreased U.S. exports to Japan – a major buyer – will likely increase overall U.S. ending stocks by 50 million bushels, according to a monthly report issued Thursday by the U.S. Department of Agriculture. (See box.)

The USDA projects a U.S. carryout of 1.941 billion bushels, or an increase from 1.891 billion bushels projected last month. Yet, agricultural economist Allan Lines, Ohio State University, thinks USDA's carryout numbers may be "too optimistic" as competitor nations rush to supply Japan's needs

"China's exports are up significantly, and Argentina's exports were raised by 1.2 million metric tons," Lines says. "My personal opinion is that this could really raise the carryout from what USDA is projecting."

Piling on the woe is a 10 percent reduction in corn exports from one year ago. Time to make it up is vanishing as the marketing year is halfway through, Lines says. If 2000/2001 exports matched one year ago's, the projected carryout would be about 1.7 billion bushels, not the projected 1.941 billion, he says.

Meanwhile a 15-million-bushel increase in soybean exports wasn't enough to muster any courage from USDA's price projections, which dropped by about 10 cents per bushel. USDA is projecting a price range of $4.45-4.65 per bushel, compared to February's $4.50-4.80-per-bushel projection. The average price for the 1999/2000 crop is $4.63 per bushel.

USDA projects a soybean carryout of 330 million bushels, down by 15 million bushels since last month, but still 40 million bushels above the 290-million-bushel carryin to this marketing year. That's still a lot of beans to do any good for prices, Lines says.

In terms of processed beans, domestic crush is holding steady, while meal exports aren't getting a lift as an alternative to Europe's ban on meat and bone meal feed resulting from the "mad" cow disease scare.

"We are coming to grips with the reality that the U.S. is not going to realize the euphoric thought we'd be sending more meal to Europe to replace the feeds lost to the meat and bone meal ban."

Despite Thursday's report, the real news is yet to come, Lines says. The trade is waiting on USDA's planting intentions report scheduled for release on March 30, Lines says. That report will help to indicate the potential size of this year's production based on the amount of acreages farmers intend to plant.

USDA gave a peek at what could be in store at its annual agricultural outlook meetings in February. USDA expects farmers to plant 1 million acres more of soybeans, which could raise the September 2002 carryout to 475 million bushels from the current 330 million bushels projected for the 2000-harvested crop.

"There's a general agreement that soybean ending stocks will go up, and prices will go down," Lines says.

However, some of USDA's preliminary planting intentions numbers don't agree with Lines' arithmetic. USDA is projecting 3.1 million fewer acres of corn and wheat, leaving him wondering the fate of an unaccounted 2.1 million acres. The question is how much of that amount will be shifted to soybeans, which would be "more negative pressure than USDA would seem to suggest.

"I have a hard time believing that farmers will leave 2.1 million acres unplanted," Lines says.

The USDA announced on March 7, 2001 that it will offer to purchase seed containing the transgenic protein – Cry9c – in StarLink corn so that farmers don't plant it this year.

Seed companies had found traces of StarLink, approved only for livestock consumption, in about one percent of the seed corn intended for sale in 2001, according to the American Seed Trade Association.

Working through its Commodity Credit Corporation, the USDA will spend $15 to $20 million to buy the contaminated seed from companies not affiliated with Aventis, the producer of StarLink, or licensed to sell the transgenic corn.

The USDA urged farmers to verify that the corn seed they buy is free of StarLink.

from CropChoice

Honey Board Round Tables

Too Early To Tell

In the wake of the resounding defeat of the referendum posed by supporters of the National Honey Board last Fall a full blown scramble to figure out both why, and what-now took place.

The result of the defeat left only one choice – a continuing referendum this August. It seemed obvious to many that if left as is the Honey Board would probably be history by Thanksgiving. To avoid this all-or-nothing choice the Board's supporters made the prudent choice of negotiation and compromise rather than continuing the ineffective persuasion techniques first implemented to convince producers, packers, handlers and importers to adopt the referendum's changes.

There is no doubt that a portion of beekeepers in the U.S. have been significantly dissatisfied with the workings of the Board in general and specifically the leadership of both the past CEO Bob Smith and the current CEO, Nathan Holliman. This dissatisfaction has continued.

To ease this unrest and to explore other problems the Board called for an Industry Round Table, to include the executive committee of the elected Board, a handful of Board staff, and representatives of the American Beekeeping Federation, the American Honey Producers, The Mid-U.S. Honey Producers, The National Honey Packers and Dealers, Sioux Honey, U.S. Beekeepers, and the Western States Honey Packers. USDA ARS representatives and a few others were invited to attend. They met in Washington, DC in mid-December.

From this meeting came the following strategies: 1. Protect the wholesome image of honey; 2. Promote varietal honeys; 3. Define adulteration (country of origin, grading, etc.); 4. Price cannibalization (price reporting etc.); 5. Industry communications, and; 6. Market innovations.

These were defined as key issues and each group was to further these discussions before the next Round Table, scheduled for January. The NHB News Release was bland compared to the actual meeting, and didn't mention the typical manipulation that USDA mediators exert to maintain control, but there was some positive output.

The second Round Table was held in Reno at the end of February, just before the very-delayed Board meeting and Nominations Committee meeting. In spite of the first meeting's goals, more fundamental topics surfaced here. On the agenda were the in-progress antidumping effort, the role of the Honey Board and the next farm bill.

Antidumping didn't budge. Producers want it, packers and importers, mostly, don't. Commerce will decide. Which brought up the Loan Program. Forfeitures are not good, but the outside market, and to some degree the result of antidumping efforts will determine how much honey the government eats.

The role of the Board was the most interesting part of this second Round Table. The discussion ranged from complete dissolution to forming two boards to leave-it-as-is. The two-Board concept explored a producer only Board and an importer and packer Board. Both would collect funds, one 'staff' would administer. A better balanced program, with producers paying less would be one result.

Voting to initiate this would be interesting, but possible. There are other commodities that use this scheme to accommodate somewhat equal funding.

Yet another option surfaced. That being to postpone the August continuation vote for six months. USDA agreed it could. During this time the 'industry' could determine how to set up two Boards. Ultimately this was agreed on, and the next vote will be in February, 2002.

Still remaining are two camps, however. One, make changes to accommodate producers, or the petition collected by the AHPA to end the Board will be submitted. The other, keep the Board the same. Six months is a tiny window to settle this difference.

Meanwhile, some data to give you some background. Right now, about 460 or so people are paying $1,000 or more to the Board each year. That's 70% of the Board's total Assessments. Only 185 or so (including about 30 importers) are paying more than $2,500. This means that many hundreds of people are benefiting from the labors, or investments of a very few. And those few have no more voice, at the moment, than a two-barrel beekeeper.

The new Ag Secretary has yet to make her position known regarding appointing Board members and, coupled with irregularities at the last nominating committee meeting may spell the end of that. AMS, who oversees the nominations had to backtrack some decisions made at the meeting on seating people on the Board, and a lawsuit is currently being investigated regarding wholesale mismanagement of the nominations committee meeting. Add to this that people not part of the honey producing industry now sit on the Board, and the future of two Boards, or more looks possible.

The excellent service the current Board staff provides the industry and interested parties wasn't mentioned in either of these meeting. The exceptional web page, statistics gathering and other services are currently not available anywhere else.

Questions of management continue to surface, and did again at the last meeting. The NHB budget, detailing research spending, promotion spending, Board activities and staff salaries has come under close scrutiny by some, and have, for reasons unknown remained elusive.

Perhaps six months isn't enough time. BC

Display Advertisers

BOTTOM BOARD

Pew Pew L'Pet

Ed Hughes

It was a calm, late-Summer night the first time the skunk raided the bees and the 10-gallon pail of cat food. He woke me up when he tipped over the cat food. When I turned on the light to see what the commotion was, I saw him on the patio, seated before a giant pile of cat food, and surrounded by an audience of admiring cats. Cats are no good at keeping skunks out of the yard. He was one of the healthiest looking skunks I've ever seen.

In the morning, I cleaned up the cat food and inspected the hives for skunk damage. One hive in particular had what appeared to be fresh scratch marks along a crack between two hive bodies. Just to make sure, I scratched at it myself a bit and, within a couple seconds, out popped two bees. As I have in the past, I hauled out pieces of pre-cut chicken wire and laid them on the ground around the hives. I also put a plastic crate over the pail of cat food.

The next night, it was the sound of the plastic crate being flung aside that woke me up. I did not bother to get up even though the crunching kept me awake for a half-hour.

In the morning, I cleaned up the cat food and began constructing a two-foot high wall of chicken wire along the base of the picket fence that surrounds our yard. It was flush with the ground and stapled to the fence. I also laid chicken wire on the ground under each gate. I even encased the skunk's favorite hive in chicken wire. It was an arduous task, but I felt satisfied after doing it. Lastly, I added a good sized rock on top of the plastic crate that covered the pail of cat food.

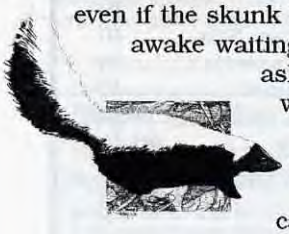
The next night, it was the heavy thud of the rock hitting the concrete patio that woke me up. As I lay there listening to the crunching, I had a vague recollection of having heard the groans of a weight lifter in training just before I woke up.

In the morning, I cleaned up the cat food and inspected the perimeter for breaks. I tightened a few spots here and there, but otherwise it seemed solid. As much as I hated to take the food away from the cats, I moved the pail of cat food inside. I had been reading about skunks and discovered that it is bad to give your skunk cat food. Apparently, it gives them gas. It was that day, too, that we mistakenly thought that naming the skunk Pew Pew might make dealing with him easier.

The next night, I woke to the smell of something being sprayed by Pew Pew somewhere very close by. I lay there smelling Pew Pew for nearly a half-hour before the odor began to dissipate.

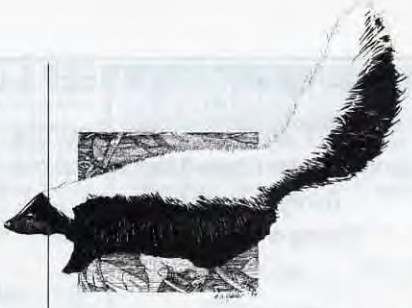
In the morning, I inspected the fence and smelled the cats. None of them smelled especially bad (although I discovered that cats do not like to smelled by animals that are much larger than themselves) and the fence seemed solid as ever. I was puzzled.

The next night, I was again treated to the odor of skunk very close to the house. There is no getting used to the smell of skunk, even if the skunk has a name. It smells bad every time. As I lay awake waiting for the gentle night breeze to do its work, I asked Bobbalee what she thought the problem was. She was, as I expected, wide awake.



"Are you sure you have Pew Pew fenced out?" she asked.

"I've covered every conceivable entrance. I can't believe he's still getting in."



"Could it be that he's already in?"

It's great being married to a logician.

"So, you think I should try leaving the gates open tonight, thus giving him an opportunity to escape."

"It might work."

The next night, I left the gates open and woke up to the sound of the alarm clock. The night after that, I shut the gates and woke up to the sound of the alarm clock.

The lesson here seems to be that, while you can build a skunkproof fence, make sure the skunk is on the outside. Also, it does no good to name your skunk.

In the future, I will address the topic of badgers and bees and why you shouldn't name your badger Bucky.