

CATCH THE
BUZZ
at www.airoot.com

OCT 2000 

Bee Culture



PLUS . . .
Managing 100
Bee Culture's Beeyard
Newsletters
Shim Retires
Selling Gift Baskets
October Honey Survey

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

OCTOBER 2000 VOLUME 128 NUMBER 10

FEATURES

SHIM RETIRES 4

37 years as the Bee Guru of Beltsville.

45 YEARS OF FOULBROOD 24

After studying AFB for nearly a half-century, Dr. Wilson offers both an academic and an applied perspective.

Dr. Bill Wilson

MANAGING 100 29

Efficient production will make 100 possible, and profitable.

Rick Green

DON'T OVERLOOK THOSE NEW SMALL FARMS 32

Beekeepers can work with the new alternative, organic and even conventional farmers and everyone benefits.

John Mitchell

GIFT BASKET NICHE 35

You can create a market now for seasonal and special sales.

Mary & Bill Weaver

SHUTTING DOWN 39

What you do now will make life easier, or harder next Spring.

James E. Tew

BASKET CASE 43

Making Gift Baskets tips and tricks.

Ann Harman

EFFECTIVE NEWSLETTER DESIGN 50

The final article in this series looks at how your newsletter looks.

Mary Gannon

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), October 2000, Volume 128, Issue 10, 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

Published by The A.I. Root Co. Copyright© 2000 by The A.I. Root Co.
All rights reserved.



Bee Culture is Printed on Recycled Paper



Hachiro & Susan Shimanuki

DEPARTMENTS & COLUMNS

THE INNER COVER 10

Research crossroads.

Kim Flottum

NEW PRODUCT REVIEWS 11

Gary's CD; New Honey Container; USDA Disease Handbook and Bee Venom Balm.

WISE GUY 15

Promotion

MANAGING BEAUTY 17

Finding funds to study biodiversity remains a difficult pastime in the United States and Canada.

Mark Winston

BEEKEEPING IN THE DIGITAL AGE 20

Publishing your point of view on the web.

Malcolm T. Sanford

DO YOU KNOW? 22

What do you know about Fall management?

Clarence Collison

BEE CULTURE'S BEEYARD 47

Harvesting honey is hard work. Get help.

James E. Tew

BEE TALK 53

Harvesting is truly one of the 'Joys of Beekeeping.'

Richard Taylor

BOTTOMBOARD 64

Seasons.

Richard Dalby

MAILBOX - 6; OCTOBER HONEY PRICES - 12; GLEANINGS - 57; CLASSIFIED ADS - 61

Publisher - John Root, Editor - Kim Flottum,
Contributing Editor - John Mitchell
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

SHIM RETIRES

After 34 years as the bee guru at Beltsville Hachiro Shimanuki retired at the end of September. Those years have been the most peaceful and the most contentious, seen the most and least government intervention and have been probably the most challenging four decades in U.S. beekeeping history.

Shim started his career at the University of Hawaii with a degree in bacteriology, then moved to Iowa State for his Ph.D. in microbiology with minors in entomology and plant pathology. His mentor at Iowa was Walter Rothenbuhler, and he learned how to keep bees under the guidance of Vic Thompson.

He finished in 1963 and moved to the USDA lab in Laramie, WY where he worked of several projects and served as advisor for Martha Gilliam. When he left in 1966 Dr. Bill Wilson took his spot. Shim's been at Beltsville ever since and was the only bee scientist at Beltsville when he started (today there are seven researchers).

Over the years Shim served as Investigations Leader for Bee Diseases, Laboratory Chief, Research Leader, National Technical Advisor, and Research Microbiologist. In the 34 years in Beltsville, he worked closely with seven National Program Leaders on "Bees and Pollination" and became the "institutional memory" for bee research in the U.S. Most recently he served as the USDA Bee Industry Liaison on the National Program Staff for six-months (1998-99) before returning to the Bee Research Laboratory as a Research Microbiologist.

Aside from his research assignment, Shim has been responsible for the bee disease diagnostic and the Africanized honey bee identification services provided by the Bee Research Laboratory. He and Dave Knox have continued the bee disease diagnostic service that has been a service offered by that laboratory ever since its early beginnings in the late 1890's. In addition to performing diagnoses, he and Mr. Knox have published laboratory manuals and provided training for many bee disease specialists from the U.S. and abroad.

Shim has lectured at a multitude of state, national and international meetings, participated in workshops

and short courses, and has served as a consultant. In addition he has functioned as the USDA-ARS contact to the media, beekeepers, State and Federal agencies as well as International organizations on bee diseases, mites, pesticides, pollination and Africanized honey bees. For many years he served as a member of Apimondia's Bee Pathology Commission and chaired the Tri-Country Committee on Africanized Honey Bees and Parasitic Mites (U.S., Canada and Mexico). He served as an advisor to bee industry groups and such unusual projects as the NASA-3M (bees in space) high school science projects.

Over the years Shim received many citations and awards from the USDA including one for Technology Transfer for tracheal mite research and a superior service team award for the work on the Interagency Task Force on Africanized Honey Bees and Parasitic Mites. He was also awarded the first Apiary Inspectors of America Research Award. From the Eastern Apicultural Society he received the J.I. Hambleton award, the Research and Service Award from the American Association of Professional Apiculturists, the Dutch Gold Honey Bear Award for Research, awards for research and service from the Eastern Apicultural Society, Western Apicultural Society, Southern States Beekeeping Federation, and numerous state recognitions. In 1998 he was voted president of the International Bee Re-

search Association and re-elected for a second two-year term this year. Among his other proud recognitions is being voted an honorary member of the Apiary Inspectors of America and the Hawaii Beekeepers Association. He once served as a North American Editor for *Apidologie* and currently is a member of its Editorial Board.

His research contribution over the years will not be measured by any one accomplishment but by his ability to prepare for anticipated problems, organize research teams and obtain resources. Over his career, he and his co-workers have published approximately 200 papers on the etiology and control of bee diseases, honey



Dr. Hachiro Shimanuki at the 2000 EAS Conference.



Addressing the 1973 ABF Convention in Milwaukee.



Teaching state apiary inspectors all about chalkbrood in his Beltsville lab.

bee nutrition, parasitic mite control (chemical and non-chemical), small hive beetle, Africanized honey bees, and many other topics. He enjoyed working with young scientists and especially discussing new ideas and challenging them with new problems. He is quick to tell you that one of his biggest disappointments was the untimely death of Dr. Elton Herbert, Jr. Together they did some fundamental research that led ultimately to the development of the Beltsville Bee Diet.

Even before the parasitic mites were discovered in the U.S. Shim was interested in the problem. For instance, he was able to obtain funds for research grants on the control of tracheal mites with Dr. Alfred Dietz and for the control of *Varroa jacobsoni* with Dr. Roger Morse. Although beekeepers and some scientists insisted that the tracheal mite was not an economic problem, he and Dr. William Wilson persisted in getting their respective laboratories to work on developing menthol to control the tracheal mites.

During these years he has worked with many students including Martha Gilliam, Dave Knox, Elton Herbert and Jim Tew.

Shim and his wife of three years, Susan, have been, and will continue to be on the lecture circuit even after he's officially retired.

Susan is a site coordinator in Baltimore for a federal grant from the Justice Department working within a special initiation and safe haven in high crime areas. She assists residents in block organizing, after school community programs, midnight basketball and helping residents cope with violence.

Stressful, and dealing with this stress is why she

What's In A Name?

In case you ever wondered, Shim's name comes from the Japanese, with, depending on its use, several meanings. Since he was the eighth child, his mother used 'Hachiro,' which means 'Eighth Son,' although he was only the eighth child in the family. The other meaning is more in line with his later calling. 'Hachi' means bees and wasps, in general, while 'Hachi Mitsu' means honey.

took up beekeeping. She and Shim met at a bee meeting and they keep a few hives at home.

After retirement? Shim and Susan (who is also retiring soon) will remain on the lecture circuit but won't keep the hectic schedule they have now. And there are still a few projects to finish for the USDA. Writing? Definitely in the plan. But fly fishing! Now that's the way to retire he says.

No doubt, those who have had the opportunity to use his council, benefit from his wisdom and experience, and occasionally bang heads will miss his quiet voice.

Good fly fishing Shim. Drop us a card when you can. **BC**

KEEP IN TOUCH

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

MAILBOX

Good Time At EAS

From July 31 through August 4, 2000 my friend and I attended the EAS (Eastern Apicultural Society) conference held in Salisbury, Maryland.

On July 31 we were participants of the EAS Level II short course, which was simply outstanding. During the two and a half days the short course ran, all individuals were subject to hands-on manipulations with various races of honey bees both in the laboratory and beeyard. In fact, one session taught many individuals to graft queens from hours-old larvae. Other exciting topics gave insight to beekeeping antique smokers and tools, while other classroom sessions geared toward integrated pest management techniques.

Each day's speakers, laboratory and field (beeyard) sessions were interesting and educational. Likewise, all the speakers and instructors were very helpful and extremely friendly.

The convention itself was just as stellar as the two short course levels, filled with numerous sessions and topics focused on honey bees and the current honey bee research being conducted throughout the world.

Most amazing was the fact that all the convention attendees were fortunate to speak with many of the beekeeping industries prominent professionals. Not just speaking to one another in a professional capacity but as friends and acquaintances.

Above all, we relished in the comradely and kinetic energy the EAS 2000 convention produced.

We would like to thank the EAS board of directors, all master beekeepers, scientists, speakers and especially David Bernard and all the hosts from Maryland, who made this year's EAS convention a true success.

Daniel Gaitan
Greensburg, PA

No To Drugs

The visitor to the Ohio State Beekeeper's Association you reported in the Inner Cover column in the July, 2000 issue was only the latest in a long string of people antagonistic to using drugs in a hive, this time to terramycin. I would appreciate having you print, or reprint, the research report which quantifies the amount of that drug found in honey intended for human consumption. Especially when the TM in patties and in dust is applied when no extracting supers are on the hive. If I am being encouraged to avoid such use, I ought to know precisely what the danger is of honey contamination. Otherwise, I am left to suspect that the dangers are simply being imagined.

Dan Hendricks
Mercer Island, WA 98040

How Does It Work?

As a firm believer in apitherapy, I am no longer embarrassed when asked why it works. Several years ago one of my grandchildren asked me how gravity worked. After considerable research I realized that no one knows. If no one understands gravity, the force that holds the entire universe together, why should apitherapists be concerned if they don't understand how apitherapy works?

Norman Bantz
Tuckahoe, NY

A True Bee Language

Scientists have puzzled for years on just how honey bees communicate. It has been amply demonstrated that ants, another social insect with remarkable similarities to bees, transmit information on food sources by odor. VonFrisch's classical work seemed to show that bees communicate food source information through "language" - dances and

sound. The language theory was questioned in the 1970s by Adrian Wenner who proposed that odor is indeed the means by which bees communicate food source information. A number of tests by Wenner supposedly proved his hypothesis.

Wenner's work has been ignored or questioned by many in the scientific community but recent studies should put an end to the controversy.

Scientists in Belgium, using electron microscopes have discovered tiny etchings at the bottom of bee comb cells. At first, these marks were thought to be random, but careful study has revealed a true bee language. The markings are believed to be made by specialized workers that researchers have temporarily dubbed "Library bees."

The markings appear to be of uniform size, like letters in an alphabet, and when run through a computer they fall into a pattern consistent with that of a language. Working day and night with high-speed computers, researchers have found that every hive or colony has a basic textbook or bee language, starting with a chapter on "Where do you go when you first emerge?" and including chapters such as "Pollen or nectar, you decide" and "What to do on a rainy day." These texts have been shown to be virtually identical among hives from widely different locations, although slight variations have been reported - in a colony from Africa, for example, a chapter entitled "Controlling aggression, good or bad?" was found.

Scientists are now looking at what appears to be a text at the bottom of queen cells entitled "The History of our Species." One chapter of particular interest in this latest text has resisted efforts at decoding, but it appears to detail how bees have used mankind to spread their genes.

Needless to say, scientists are very excited about these latest

MAILBOX

discoveries which should put an end to the language controversy for all time. Significantly, Wenner has been noticeably silent on these new findings.

Submitted by Joe Traynor
Bakersfield, CA

Do The Math

I just read April 2000 issue. Beekeeping stats on page 13 are hard to understand. Do the math. Right. So U.S. beekeepers produce less than 10% (201.06 x 10³) of the weight claimed in 1999 by the figure in Kim's editorial in that issue. Granted it might be '98 figure he was reporting 218,260,000 lbs. Things are hard enough to pick on.

Why is retail price for white honey listed at \$123.40/ctwt (I assume) when retail price is \$2.74 for '99 one pound glass? Or is retail not retail out of a store such as it seems to imply. If not, what is retail? These figures should help those of us who are not major producers or packers since those people have other more pertinent sources of information.

Ian Atkins
Coquille, OR

Editor's Note: The \$1.23 price is generated by USDA sources and includes many sellers and locations. The \$2.74 price reflects prices generated by our reporters. The value of these numbers is to follow the trend of prices (both down), and react accordingly.

Bees & Bats

Some night-flying insects prey on bees. Has anyone considered building houses to attract bats which will eat the night-flyers? A house is 2 feet high, 18 inches wide and 4-³/₄ inches thick, with ¹/₄ inch net (wire or screen) on ceiling of one side for them to climb and hang on.

Paul Doerr
Fairfield, CA

Timely Responses

As a frustrated editor, I'd like to address a point that has both-

ered me for a number of years (and one I'm sure has occurred to you): timely responses in your Letters to the Editor (LTE) section.

The LTE section is widely read and often contains some pungent commentary but too often the response(s) to an individual LTE are delayed to the point where it's meaning has been lost, or at best is cloudy.

A case in point is the current Bee Language "controversy." When one letter appears on the subject, a response to it usually doesn't appear for two months and unless the reader has the original letter (or has the time to find it) he/she will likely either skip the response or have a difficult time interpreting it. (This applies to other topics, such as the Honey Board, small cells, etc.) As a result, it can take a year for an exchange of views that could (should) have taken place in two months.

An easy remedy would seem to be that when a letter giving one side of a multi-faceted subject is received by you the letter could be faxed to an appropriate person(s) for an immediate response (should that person desire to respond) and both the letter and the response would appear in the same issue - carrying this further, a rebuttal to the response (by the original letter-writer) could also be published, etc., etc. The New York Review of Books uses this format (Mr. ___ responds) and the exchanges are lively, widely read and often contain some elegant put-downs (e.g., Unfortunately, it is obvious that Mr. ___ is not aware of ___'s 1955 study).

All of you do a terrific job of putting out great publications that are of great value to the bee industry and the personal time and effort you put into them is very evident. I'll always be a magazine-newspaper person as I like holding reading material in my hand, but timeliness is becoming more important in this "information age." The above remarks are directed toward timeliness.

Joe Traynor
Bakersfield, CA

Horse Fly Spray

Caution should be used when

using common fly sprays such as "Permethrin II" or "Absorbine Ultra Shield" on horses with beehives in the vicinity. These types of products can enrage passing bees and result in a dangerous stinging incident for both horse and rider.

I've kept bees around horses for 30 years without incident. However, a landowner began using these products daily on her favorite horse who was tied up in the same spot for each application. After several days enraged bees began stinging both horse, rider and people in that area.

The bees were located about 100 feet away behind a building which forced them to fly 20 feet high when flying in the direction of the hitching rack. A light honey flow was on at the time. Winds were calm.

No bees were noted during an initial inspection of the area. Neither horses nor people were being bothered. An inspection of the bee yard failed to yield any aggressive bees or hives. The hives were not being harassed by skunks or wasps.

A horse was tied to the rack and not a bee appeared. After a while the owner took the opportunity to apply the fly spray with a hand sprayer. Within two minutes angry bees began to appear and instantly sting any moving object in the immediate area. The bees would fly at full speed headfirst into the ground where any over spray had fallen.

I again inspected the bee yard for an angry hive but the yard was calm.

I sprayed a small amount of the fly spray on a paper towel and walked back to the bee yard. Initially the yard was as calm as before, but within 30 seconds the stinging started again. Within a minute the stinging became quite vicious.

I have been a commercial beekeeper and have worked many yards of angry bees. However the rapidity and intensity of the stinging in response to the fly spray has only been matched by working a yard of the meanest bees at the worst time.

Dennis Murrell

Continued on Next Page

AL Promoting It's Own

The Alabama Beekeepers Association Board of Directors, responding to our commercial members' continuing complaints regarding National Honey Board promotion of imported honey, has proposed that Alabama promote its own honey.

While we have the Alabama Farmers Federation (ALFA) to ask for guidance in carrying out this proposal, not all states are so fortunate. The solution (if there is one) may be a regional alliance of states for promotion of their honey.

The National Honey Board referendum was just voted on. When you say "Quality Assurance," it is like apple pie, mother's milk and fourth of July - everyone is in favor of something that sounds good. Or, will it prove to be like the dairy industry which has almost "Quality Assured" itself out of business? It started out with promises that "this is for the big producers only," but that industry has drastically lost producers as their "Quality Assurance" program was extended across the producer spectrum over a period of time.

Additionally, it is my understanding that approval of the referendum is a five-year automatic extension of the life of that board. If this is, indeed, the case, then the National Honey Board certainly should have made this better known before the referendum vote was taken. To let this apple-pie Quality Assurance referendum slide through with an automatic extension of the life of the Honey Board is deceptive manipulation of the system and further tarnishes the scarred image of that board.

If the information I have received is correct, then the Honey Board may well be aware of this voting flaw in the referendum. A further extension of the life of the Honey Board will certainly see the demise of the beekeeping industry in the United States, and will result in only packers and import-

ers sitting across the table from each other.

James L. Smith
Chunchula, AL

Wise Guy Protest

Once more, I am moved to protest your Wise Guy column. Your July installment is too full of lies and half-truths (the more dangerous of the two, since they tend to be more believable to the ill-informed reader) to let it go unanswered.

Mr. Guy would have you believe that there has been a paucity of information available on the Honey Board referendum. He asked the Honey Board for "legislation" and was sent to a website where he got the "act." And his point is??? "Acts" are legislation which have passed Congress and been signed by the President.

Here's what I found on the Honey Board website
<www.nhb.org>:

- Current NHB Order - the regulations NHB is currently operating under.
- NHB Act - the law which enables and dictates the Order.
- NHB Act Amendments - the changes to the law which enable/mandate the proposed order which will be the basis for the referendum.
- Honey Research, Promotion, and Consumer Information Order - Proposed Rule - the proposal published by AMS. After receiving comments and revising the proposal, this will be republished for the referendum vote.
- Red line of published proposed rule - an amalgam of the proposal and the current order; the reader can see the proposed changes and how the changes would affect other parts of the order.
- Industry comments regarding proposed order.
- There is also a notation that the actual proposal to be voted on is not yet available; an indication that it will be available as soon as AMS releases it (this should happen about September 1).

The Honey Board website even has reports from two task forces assembled to speculate on what shape the two major changes may take, following a positive referendum: "Draft of Bee Research Policy" and "Draft of Quality Assurance Policy." And there are simple fact sheets, suitable for distribution at meetings: "Referendum Overview" and "Referendum Question & Answer Sheet."

To indicate that the Honey Board has not provided sufficient information on the referendum is beyond disingenuity on Mr. Guy's part; it is an outright lie. The Honey Board has provided everything available to inform the industry. You don't have a computer to access the website? A call to 800.553.7162 will get you a hard copy of the same documents. Perhaps this is too much information for a person with Mr. Guy's demonstrated intellect.

To his credit, even Mr. Guy stumbles across a kernel of truth on occasion (which just makes his column even more dangerous): "The beekeepers are the least informed of all people involved." *The Speedy Bee* offered a packet of the above-referenced documents, basically for the cost of copying and mailing; just one order came in. Either the industry doesn't care, or else they already know what they want to know, and are ready to vote - I suspect the latter.

And, Mr. Guy and *Bee Culture* put out some bald-faced lies, such as, "If this referendum passes, AMS will get more money as the beekeeper's contribution goes from one cent per pound to 1.5 cents per pound."

First, the amount of the assessment has no direct bearing on the AMS oversight fee, but if the Honey program has more facets and is more complex, a larger oversight fee is to be expected.

Second, the assessment for producers will drop from the current one cent per pound to just ¾ cent when the referendum passes. Mr. Guy didn't even wrap his statement in the old "the producers will pay the increase flag; he just puts out the erroneous statement that producers will pay 1.5 cents, and it just is not true.

Without question, I favor the proposed changes to the Honey Board, but I will accept the decision of the industry wishes on this is-

MAILBOX

sue, as long as that decision is based on fact and not on the lies and half-truths of Mr. Guy and his ilk.

Troy Fore
American Beekeeping Federation

Backsaver Response

Thanks to *Bee Culture* for publishing an evaluation of Backsaver (August issue, page 34), our unique hive lifting tool for the lone beekeeper. This response provides an opportunity to point out significant improvements in today's Backsaver over the reviewer's old style model purchased two years ago.

First to correct some factual errors:

- A complete Backsaver, including arms, legs, and chain costs \$69 plus shipping. Shipping costs depend upon the distance of the purchaser from Maryland and are specified exactly, based upon zip code, in each free brochure we mail out to requesters.
- Backsaver is **not** "easily assembled." It comes **fully** assembled, ready for immediate use, though purchasers should first read the complete operating instructions and photo-illustrated brochure included with it.
- Contrary to the review, our instructions do **not** caution about "adverse effects of storing Backsaver out of the weather." We **recommend** storage out of the weather. However, Backsaver is weather resistant,



with pressure treated wooden legs, aluminum arms, chain and other metal parts of galvanized or zinc-coated steel, and nylon rope. We do caution that a Backsaver routinely left out in the wet should be hung or stood up to minimize weather damage over time.

When using Backsaver to load a hive onto a vehicle, **no** assistant is required (although as for any job, a good assistant could help it go faster). Position the vehicle yourself. Then use Backsaver to load the hive on or off of it, just as our brochure illustrates in a photo sequence.

New all-aluminum construction lightens Backsaver's arms and avoids the potential of our former plywood arms (used by the reviewer) to crack and split from water damage.

A Backsaver leg is now one piece of pressure-treated lumber, unlike the reviewer's two-piece legs. The legs are stronger, and their length can now be adjusted in seconds by moving the single large pin joining them.

Backsaver will continue evolving into an ever more efficient and useful tool for the lone beekeeper who refuses to "just live with" a ruined back. I know we're on the right track because of letters from users such as Barbara Miller of Denver, PA who writes: "... Backsaver is wonderful. I have used it when reversing my deeps in the Spring, when medicating the brood chamber and for removing filled supers. I would be unable to do any of these operations single-handedly without the Backsaver... Thank you!"

Eric Nickerson
Mountain Road Apiary
Fallston, MD
410.877.0345
enickerson@msn.com

BEES & BEEKEEPING SUPPLIES
FREE CATALOG

RUHL BEE SUPPLY

12713 B N.E. Whitaker Way
Portland, Oregon 97230 (503) 256-4231
Ed & Sheryl Johnson

GREAT ALTERNATIVE PACKAGING



Choose from our family of bears. Prices with spouts, flip tops available.

8 oz. low density	case/400	\$113.61
8 oz. clear	case/400	129.00
12 oz. low density	case/300	86.20
12 oz. clear	case/250	69.95
24 oz. low density	case/125	60.00
32 oz. low density	case/100	50.00



Attractive hexagon glass jars. Prices include gold metal lids.

45 ml	case of 24	\$6.75
5.5 oz.	case of 12	4.20
8 oz.	case of 12	5.40
12 oz.	case of 12	6.50
12 oz. tall	case of 12	7.25



Choose our (A) crystal clear clamshell, (B) cardboard section box or (C) hard plastic traditional cut comb box.

Crystal Clear	case/100	\$25.00
	case/600	90.00
Cardboard	case/50	\$27.50
	case/100	39.50
Tradiational	case/100	\$51.00

FREE CATALOG

B & B HONEY FARM

5917 Hop Hollow Road
Houston, MN 55943

Information Line 507.896.3955

Order Line Only 800.342.4811

FAX 507.896.4134

bbhoney@means.net



INNER COVER

Dur cover photo and a story a few pages back draw attention to one of this industry's most notable personalities – Dr. Hachiro Shimanuki . . . Shim almost everybody, who retired from government service at the end of September. Shim's career is highlighted by his unswervable goal of solving problems for beekeepers in this country and throughout the world.

Because of his highly visible position and the fact that he just wouldn't back down when he felt he was right, Shim took some hits over the years. Most of them from his own agency, ranging from pure unadulterated politics to pure science. Political hits, by nature, are a lot more difficult to dodge than scientific ones. Some of those you win, and some you don't and move on.

Shim was, and is, even more successful when it comes to decisions of policy based on science and his research and publications prove that. But even here different opinions followed, some from this page in years past. But all things considered I'd still bet the farm on one of his calls. And lots of beekeepers are still in business because they did. And lots aren't because they didn't.

Another USDA honey bee researcher hung up his beesuit this year too. That's Dr. Bill Wilson from the Weslaco Bee Lab in Texas. Bill had the good fortune of remaining just a bit less visible on the agency's radar than Shim, so he wasn't quite as often a political target. That translates to being left alone a bit more, which in turn translates to getting more of the everyday stuff done that researchers need to get done.

Because Bill wasn't as encumbered with politics he focused more on discovery than policy. And discover he did (certainly with others, and with the guidance and oversight of at least some of the policy wonks in USDA). The history of AFB and terramycin is documented elsewhere in this issue, without a doubt Bill's most popular discovery.

And during his career, like Shim, Bill's goal, his reason for getting up everyday and coming to work, was to make sure beekeepers could simply, easily, efficiently and safely keep on keeping bees. Though not without his share of critics, Bill persevered to make things better. And again, lots of beekeepers are still in business because they believed in his work and followed his advice. We'll have more on Bill next month.

But today, both Shim, when he's wading in a creek somewhere, flyrod in hand, and Bill, out there enjoying the cool, moist seasons of Seattle, should rest well knowing they made their mark and reached that elusive goal of personal and professional success.

The science and the art of beekeeping are better because both of you did things right . . . and did the right things. Thanks, guys.

The future of the honey bee research, and in particular research aimed at solving management problems is certainly less certain now, I think. Without doubt the Beltsville lab remains, but its focus has changed and those in charge are definitely on a different page than in years past. Weslaco's future, for years uncertain and too-often just-in-time saved by influential beekeepers, is even less certain now that the chief is gone. Tucson has for years been on the verge of disappearing

and continued budget cuts foretell a bleak future, or even existence. Baton Rouge is still a stronghold of output and the industry needs to ensure it's survival.

Strongholds of beekeeping research at the University level can be counted on one hand. Those that are major players will continue mostly because of strong, regional industry support. But even they must answer to policy people with other interests.

Without doubt the most successful have had industry support from strong regional groups with deep pockets. Regional centers include Minnesota and Pennsylvania. Some states have moved independently in their support . . . South Carolina, Georgia, Michigan and Indiana. These tend to be focused projects that may apply to other locales, or not. California is the exception, with large donations to researchers in other states solving problems most of us encounter. They are high on the list of forward-thinking people in this industry.

Industry groups that transcend state boundaries (not unlike the California beekeepers) are helping. The American Honey Producers have come through in many pinches at the national level. The American Beekeeping Federation has started a program that's not yet up but promises to be helpful, and The Eastern Apicultural Society has had a small but significant program underway for several years.

If the referendum for changes for the National Honey Board just voted on passes, nearly a half million dollars a year *could* be spent on research, but they left themselves an out and can distribute it each year, or not, if they choose. And, like much of the rest of the choices the industry was given, the rules aren't written yet. Shim would appreciate the politics of the decisions they will make. Bill Wilson would have just appreciated the chance to answer another question.

Those who have problems that need solving wait, and hope the infighting, the favoritism and the politics that now surround every decision the Honey Board makes will come second to the real work this money could fund.

We'll see.

Research Crossroads

NEW FOR YOU



Generally we leave music reviews to MTV, or the classical experts. But Dr. Norm Gary, of queen pheromone and Hollywood movie



fame, recently released a CD demonstrating yet another facet of his entertaining skills. Norm is a Dixieland music lover, and about 30 years ago or so started

playing with a band. That experience evolved through a trio, a quartet, playing at the Sacramento Jazz Festival and finally organizing his own band - Beez' Knees (from a song of the same title on the CD). They've played for several years at pizza parlors (Shakey's), festivals and fairs. Even at his 'Thriller Bee Shows' in Orange County.

If you enjoy Dixieland Jazz, with clarinet, trumpet, sax, bass, vocals, drums and trombones you'll enjoy this. The 16-song CD, entitled *Just Buzzin' Along*, is \$15. Send to Norm Gary, 4935 Hollycrest Way, Fair Oaks, CA 95628. Oh, Norm is the guy with the clarinet, covered in bees. Can't miss him. Don't miss his music.

Introducing a clever new container that is perfect for containing and dispensing honey. The invention (shown here) is a bee style container that is both attractive and functional. The primary objective of this invention is to provide honey lovers with an appropriate container that is more associated with the product inside. It is a container that is sure to bring a smile to any face. It is a better container because it features the bee instead of a bear which is frequently used for honey containers.

For years, the bear has always been associated with honey, only because of the bears love for honey. However, it is really the bee that produces the honey and which should be recognized. This led inventor, Jeffrey Hand, to the development of this "Honey Container." It is a cute and attractive container that is much more appropriate for honey.

This is an invention in which the inventor has used simplicity and careful planning in its basic design. Because of this, the design is practical and consideration has been

given to the honey industry. For more information contact: The Honey Bee Container, Jeffrey D. Hand, 149 Patterson Road, Roebuck, SC 29376, 864.476.6229.



USDA Handbook #690. Diagnosis of Honey Bee Diseases. Hachiro Shimanuki and David A. Knox. Paper. 58 pages. B&W.

This is an update of the same book published in 1991. This handbook describes lab techniques used to diagnose diseases and other abnormalities of honey bees, and to identify parasites and pests. The new edition includes small hive beetles, new techniques for collecting *Varroa* and testing methods for AFB resistant to terramycin.

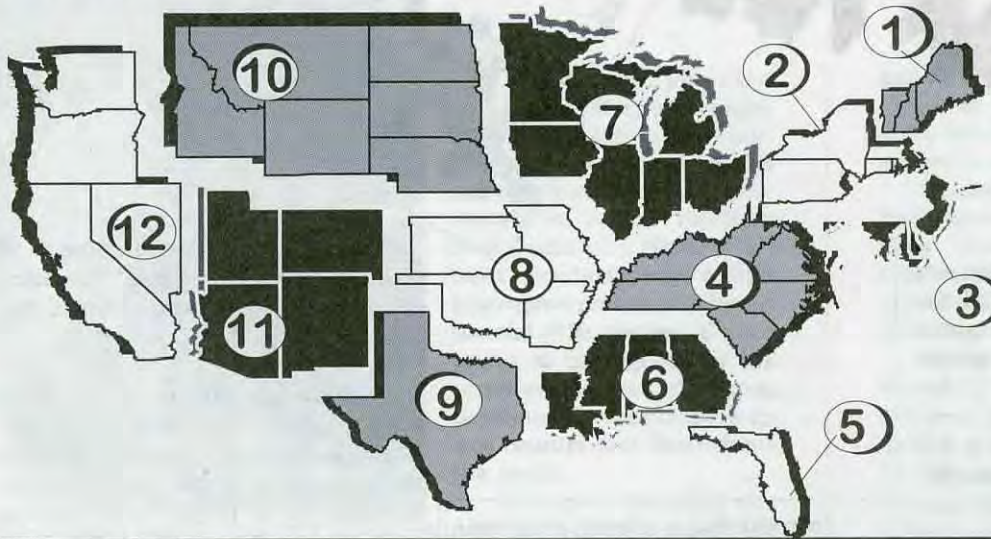
While supplies last, single copies may be obtained at no cost from Bee Research Lab, Bldg. 476, BARC-East, Beltsville, MD 20705. After that they can be purchased from NTIS. Call 703.605.6000.

Bee Venom Balm Aerobic Life, a leading developer and distributor of alternative health products based in Phoenix, AZ, is now offering Bee Venom Balm to the U.S. market for the first time. The product combines pure bee venom with a blend of natural oils for deep pain and inflammation relief in an easy-to-use, topical cream. The specially formulated, non-greasy cream contains 225 stings of pure New Zealand bee venom per tube for penetrating, site-specific relief.

While many individuals will benefit from using Bee Venom Balm, caution should be used if an individual suspects that they are allergic to bee stings. If in doubt, the user should be tested for allergy to bee stings before using this product.

Bee Venom Balm is sold in most health food stores. For retail distribution: Natural Home Remedies, P.O. Box 1304, Mansfield, TX 76063; 877.246.6379; fax 817.473.9890; or www.naturalhomeremedies.com. For wholesale distribution, write Aerobic Life, 2916 N. 35th Ave., Suite 8, Phoenix, AZ 85017.

OCTOBER - REGIONAL HONEY PRICE REPORT



Reporters this month were surveyed to determine the extent of problems caused by several factors. They gave a value of 1 (one) for extremely problematic, to 12 (twelve) for no problem at all. We averaged the values for each region, and for all regions for all problems. The lower the number, the greater the problem, in the region and overall. We also measured demand for honey - 1 being strong demand, 3 being no demand. These averages are listed in the far right column.

Region	Tracheal Mites	Varroa	AFB	Res. AFB	EFB	Chalk	Skunks	Bear	Other	Prices	Demand
1	6	1	12	12	12	9	12	8	12	12	1
2	7	5.2	6.7	11.3	10.2	6.2	6.7	7.5	5	5	2
3	10	11	6.5	12	5.5	5	1	12	5.5	5.5	2
4	6.1	4.3	7.9	11.1	9	8.4	7.1	11.8	5.7	5.7	1.7
5	8	2	9	12	12	12	12	12	2.5	2.5	3
6	9.7	6.3	9.3	11.3	10.7	10	12	12	4	4	1.7
7	6.5	4.9	8.3	8.9	9.1	7.8	8.1	10.1	4.6	4.6	2
8	7.3	4.9	8.3	10.3	10.3	6.7	9	12	4	4	2.3
9	10.2	7.4	9	9.6	10.8	10.6	11.4	12	6.6	6.6	1.2
10	6	5	8	12	12	8.5	4	12	3	3	2.5
11	8.7	3.7	7	11.7	10.3	9.7	9.7	8.3	8.3	8.3	2
12	5	3	6.3	10	10.7	9.7	9.7	9.7	4.7	4.7	1.7
Overall	7.4	5.0	8.1	10.6	9.9	8.4	8.3	10.4	8.9	5.1	1.9

	Reporting Regions												Summary		History		
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.	
Extracted honey sold bulk to Packers or Processors																	
Wholesale Bulk																	
60# Light (retail)	68.61	68.75	61.00	70.94	75.00	64.67	53.50	59.40	78.00	62.00	80.25	71.67	48.00-145.00	69.00	68.93	71.23	
60# Amber (retail)	64.69	65.44	56.50	71.00	75.00	62.50	50.50	59.20	78.00	62.00	80.33	63.53	42.00-130.00	65.45	66.22	69.86	
55 gal. Light	0.65	0.60	0.55	0.63	0.67	0.60	0.59	0.67	0.67	0.63	0.61	0.69	0.53-1.13	0.66	0.63	0.62	
55 gal. Amber	0.57	0.60	0.50	0.58	0.60	0.58	0.54	0.60	0.55	0.60	0.57	0.63	0.45-.79	.64	0.58	0.58	
Wholesale - Case Lots																	
1/2# 24's	27.74	28.72	30.18	33.09	30.18	25.83	27.95	30.18	30.00	30.18	25.48	26.00	22.00-39.60	28.95	32.55	28.65	
1# 24's	41.74	41.34	48.00	44.72	49.40	44.50	39.21	42.40	42.00	42.00	41.15	45.80	33.25-52.58	42.93	45.61	42.84	
2# 12's	38.45	40.98	45.60	42.47	39.60	36.30	38.20	41.40	42.00	31.80	34.80	40.50	31.80-52.58	39.69	40.01	38.14	
12 oz. Plas. 24's	35.21	34.66	34.60	35.24	34.80	40.40	35.09	35.60	40.00	27.60	36.17	36.47	26.40-48.00	36.22	35.19	37.36	
5# 6's	40.63	41.74	44.25	45.53	44.08	42.90	38.58	39.00	48.00	44.08	38.00	38.25	36.00-54.00	42.23	48.52	42.28	
Retail Honey Prices																	
1/2#	1.66	1.56	2.83	2.17	2.83	1.57	1.46	1.39	2.50	1.49	1.89	1.71	1.25-2.50	1.71	1.80	1.78	
12 oz. Plastic	2.13	2.13	2.90	2.40	2.50	2.32	1.77	2.21	2.56	2.14	2.09	2.12	1.29-3.00	2.19	2.30	2.26	
1 lb. Glass	2.68	2.37	3.00	3.04	3.25	2.68	2.27	2.61	3.50	2.52	2.96	2.79	1.58-4.00	2.75	2.94	2.73	
2 lb. Glass	4.47	4.40	4.80	5.22	4.75	4.00	4.20	4.84	4.84	3.41	5.80	4.20	2.99-7.10	4.58	4.58	4.52	
3 lb. Glass	5.95	6.47	6.80	6.86	6.50	6.00	5.12	6.11	6.25	4.79	5.81	6.01	3.95-9.00	6.13	6.59	6.20	
4 lb. Glass	6.87	6.60	7.78	8.32	7.78	7.03	5.42	7.99	7.00	7.78	7.78	6.00	4.10-12.00	7.25	7.70	7.77	
5 lb. Glass	9.28	9.49	11.00	10.12	10.81	8.90	8.87	10.99	9.00	7.90	11.06	8.62	6.99-16.00	9.45	10.55	9.19	
1# Cream	3.06	3.19	3.21	3.37	3.21	4.25	2.48	2.88	3.21	2.29	3.98	3.00	1.96-4.50	3.16	3.20	3.46	
1# Comb	4.19	3.89	3.60	4.24	4.59	4.25	4.23	3.99	4.59	4.59	5.49	4.33	1.95-7.50	4.31	4.40	4.20	
Round Plastic	3.56	3.15	3.60	4.00	3.80	3.00	3.50	3.66	3.80	3.80	4.25	3.98	2.95-4.75	3.71	3.82	3.83	
Wax (Light)	2.21	2.43	2.13	2.17	2.81	2.10	1.77	2.20	2.77	2.81	2.10	2.42	1.20-5.00	2.22	2.42	2.46	
Wax (Dark)	1.90	2.06	1.88	1.98	2.29	1.98	1.48	1.25	2.55	2.29	1.64	2.08	0.95-4.00	1.93	2.28	2.15	
Poll. Fee/Col.	37.10	39.40	32.50	36.25	37.83	36.00	39.20	40.00	20.00	37.83	50.00	42.75	20.00-55.00	38.50	39.93	36.90	



THE WISE GUY



Promotion. What does this mean? It's a word that many people are throwing out as the key to the honey business. I believe that promotion is the key, but we cannot do it generically, nor can we let a third party do our advertising. If promotion is to work, we need accountability by the promoters.

That is how real business works. You set goals, you establish the way you are going to accomplish these goals; this is called planning, and then you work the plan. During this process you monitor the plan and see if you are working toward the goal you set. There may be changes to the goals during the process, but you must continue the plan. If you do not accomplish the goal at 100 percent it does not mean you have failed, but it means your paycheck should reflect that you have underaccomplished your plan. Also for the overachievers they should be paid for their efforts also. We do not need a bunch of salaried employees being satisfied with average results. That is how business works.

If we truly want promotion, it needs to be specific. The current promotion is one of "If you are going to use a sweetener, honey is better than the others," which is true. But can we compete with other sweeteners on price? Heavens no! We need to return to "If you want the Cadillac of sweeteners, use honey." That is why we need more specific promotion ideas. You don't see automobile companies such as Ford with only one model. There are expensive models and less expensive models, and they market them as such. The wine industry has done the same thing. You will find the same winery making expensive grades of wine plus less expensive grades of wine. They also have very distinct flavors of wine. Why don't

more honey packers do the same thing? To me, individual packers have not spent any money on promotion. They have relied on the National Honey Board to promote the generic honey.

To solve this we need to be on the industry to stop the blending of honeys. If the referendum passes on quality assurance, beekeepers must be aggressive on the writing of the rules of quality assurance. We must insist on a no-blending clause going into that agreement. If we show no compromise on this issue, you will see honey prices increase. If you push the no-blending clause into the quality assurance bill, producers will see an overall increase in honey prices. You may see some honey go well over the \$1 figure.

No blending should be done by floral sources and by country of origin. Again, we as producers need to push this and demand that it be done. This is the one way that the price of honey will increase. I guarantee it! If we separated the floral sources it would raise the price of honey to the producer as well as to the marketer. Again this is basic marketing. Just look at the major manufacturers in the United States. They market by color, touch, smell, name and many other items. As an industry the marketing arm (packers) has chosen to let the generic promotion of the name of honey be their sole source of advertising. If you were buying honey and no one told you why their product was better because of flavor, color, floral source, availability, freshness, container convenience or any other good marketing idea and only told you that you could purchase it cheaper, then you must believe that all honey is the same.

If you have a superior product, shouldn't you advertise it? We are not the only producer group that is upset with generic promotion of their

product. The pork industry is having a referendum on their promotion board, and some of the reasons are the same as ours. The marketers have now become involved in the promotion process by controlling some producers and having the promotion board be more pro-packer just as ours is. The price of pork has fallen to all-time lows of nine cents per pound to the producer while the processor was making record profits. Sound familiar?

So if this referendum passes, our job as producers is to get our portion of the quality assurance "act" written in our favor. We must protect our market, and we must protect our product. Druing a heated hallway exchange at the mid-Summer National Honey Board meeting in Colorado, one packer told an unhappy producer that we don't need the American producer. We can get all the honey we need from imports. Folks, that is the theme of the American honey industry today. Don't like it? Then do something about it.

Wise Guy

BACKSAVER



SWING OFF ↔ SWING ON
move hives effortlessly
prevent back injury

Free Brochure Available

MOUNTAIN ROAD APIARY

1711 Chateau Ct. • Fallston, MD 21047
PH. (410) 877-0345 • FAX (410) 877-9227
email: enickerson@msn.com

Mark Winston

Managing Beauty

"The British penchant for tending garden and lane has had an unexpected but delightful side effect."



I recently returned from two weeks in England, much of it spent walking along the public footpaths that crisscross the country like side-walks. Meandering through the verdant British countryside is a unique experience, moving through picture-quaint villages and pastures, crossing stone walls and chatting with the innumerable hikers and landowners met along the way.

Rustic Britain is indeed beautiful, accessible and friendly, but it is a contrived and small-scale kind of landscape. Jeremy Paxman, a popular English interviewer and journalist, eloquently described the ardent allure of rural Britain in his book *The English*: "It is the charm of small things; there is scarcely a geographical feature in the land that has any claim on world records. It is a place of tended beauties; the country lane, the cottage small, the field of grain, belong to a landscape that has been shaped by generations of labour. Its appeal is charted in fields and acres."

Beautiful and distinctive it may be, but it is an intensely managed beauty rather than a feral wilderness. The heartland of Britain is an extended country estate, with hardly a corner that is not farmland or pasture, and what remains is carefully tended for its visual impact. Plants and animals have been rearranged and reorganized as background for human enjoyment, creating challenges to insure that nature remains alive and accessible.

The lack of unmanaged wilder-

ness in Britain is not surprising, given that there are 55 million people crammed onto islands that are considerably smaller than many American states. It has been a struggle to maintain biodiversity in this tended environment, but the British have a passion for managing nature, and through legislation and social convention have developed an intricate array of rules to preserve the remnants of their original flora and fauna.

Take a small thing like stone walls. The British Parliament enacted the Enclosure Acts in the 18th and 19th centuries, requiring landowners to enclose their fields with stone walls, 70,000 wall miles in England alone. The outcome for biodiversity has been positive, with over 80 species of plants, 15 of birds and even 10 species of snails making their homes on and within these walls.

Or take gardens and hedgerows. I'm not aware of legislation that imposes gardening on the British population, but homes are surrounded by hedges, flowering plants and tended gardens. The power of socialization is apparent here, with an unusually strong but subtle pressure for homeowners to do their part to provide habitat and resources for birds, insects, plants and small mammals.

Legislation also has made the landscape accessible, by requiring public footpaths to cross most properties, and every wall-crossing to have a step or gap allowing walkers and wildlife to easily traverse these potential barriers. This ease of ac-

cess has created a sense of communal ownership, not of each plot of land but rather in taking individual responsibility for maintaining their little remaining habitat for plants and animals.

All of this tending has been good for bees, the honey variety and all the others. From my limited observations, bees buzz all over the countryside to an extent we in North America are not familiar with. Oh, sure, a blooming California almond orchard with hundreds of colonies of rented honey bees on pallets will be aswarm with bees, and likewise a field of prairie alfalfa will vibrate with millions of leaf cutter bees traveling to and from their nesting straws.

But the British penchant for tending garden and lane has had an unexpected but delightful side effect, with diverse and feral species of bees visiting flowers up and down the land. It's a curious feeling to be in a British garden, and at first it's difficult to pinpoint what feels so different. Then, you slowly realize that in spite of the human-heavy impact on their landscape, the bees seem so much . . . wilder than those on a typical North American landscape, so . . . unmanaged.

This diversity has not been arrived at by fortuitous accident, but comes as a conscious and beneficial side effect of the Britain-as-garden mentality. Our British cousins are fanatical amateurs, and go about their hobbies with a bulldog tenacity and a professionalism that are astounding. And they join groups;

Continued on Next Page

“The heartland of Britain is an extended country estate, with hardly a corner that is not farmland or pasture, and what remains is carefully tended for its visual impact.”

there are legions of bee-preserving organizations throughout Britain, with their reason for existence being the preservation of bees and bee-friendly habitat, rather than the more commercial perspectives we find in North American organizations.

There also have been studies in Britain, lots of them, on the diversity and abundance of virtually every organism that flies, crawls, burrows, roots and grows throughout the countryside, bees included. I hear frequent laments in North America from the halls of academia and the boardrooms of environmental organizations that we are sadly lacking in information about our own flora and fauna, yet finding funds to study biodiversity remains a difficult pastime in the United States and Canada.

I've been fortunate to obtain funding for two bee diversity studies in southwestern British Columbia where I live, the first a comparison of bee populations in agricultural habitats compared to wilder settings and the second our current "Once Upon a Bee" project to discern bee diversity and abundance within the urban region of Vancouver, B.C. Both projects have impressed me with the paucity of bees in human-influenced habitats, particularly relative to Britain where people and bees seem to coexist on a considerably more comfortable level.

In pre-*Varroa* days, bee populations throughout most of our regional district consisted of managed honey bees (there are few, if any, feral colonies in this area), and the occasional bumble bee that somehow survived backyard and farm pesticide sprays, destruction of nesting habitat and inconsistent availability of nectar- and pollen-producing flowers. Today, even the honey bee populations seem to have diminished, victims of a downturn in hobby beekeeping and sporadic de-

clines in the numbers of commercial colonies rented for pollination.

I find this a curious phenomenon, since there is pristine wilderness within a 30-minute drive of Vancouver, extending northward to the Arctic Circle and beyond, with feral bees galore. Yet, within the sphere of human influence, bees are relatively few and far between, and only the one managed honey bee species reaches any level of serious abundance.

We can bemoan the lack of feral bees on our farms and in our cities, but perhaps we can learn something important from the British experience. Biodiversity is a national obsession in Britain, with a combination of government funding, intense lobbying from private organizations and an unwritten but effective social code that brings heavy pressure to bear on those who violate biodiversity etiquette.

We could do that, also, and it's not that hard. A good start would be lobbying from a coalition of beekeeping groups and environmental organizations for funding to survey bee pollinators in diverse habitats across North America. Instead of

the sporadic glimpses of data that make up our contemporary knowledge of bee populations, we would benefit from an organized effort to count species and numbers of bees on farms, in backyards, in and around cities and through our various wilderness habitats.

If indeed there is a problem with bees, as I think we would discover if we had some hard data, the next step would be to encourage and legislate programs to improve the lives of our bee partners. Mandated parcels and strips of nesting habitat and flowering plants would be a good start, and wooden nesting blocks and dirt strips scattered throughout our cities an excellent next step. Public education doesn't hurt, either. In a perfect world, every school, science museum and park would have a bee display and would promote bee-usable habitats.

I would like to believe that wild nature is all around us, but it's not so. Without effort, feral bees will continue to decline in our increasingly human-dominated world. Yet, we can manage ecosystems well when we put our minds and dollars toward maintaining biodiversity. Certainly the British experience is an example of what a more nature-friendly perspective can accomplish, and can teach us that intensively managed nature is better than no nature at all. **BC**

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

STRACHAN APIARIES **NEW WORLD CARNIOLAN & ITALIAN QUEENS**



CALL FOR PRICES
(Orders of 500 queens or more discounted.)

2522 Tierra Buena Rd.
Yuba City, CA 95993-9654
530.674.3881 • FAX 530.674.5802
Email: strabees@jps.net

Web Page: www.strachanbees.com

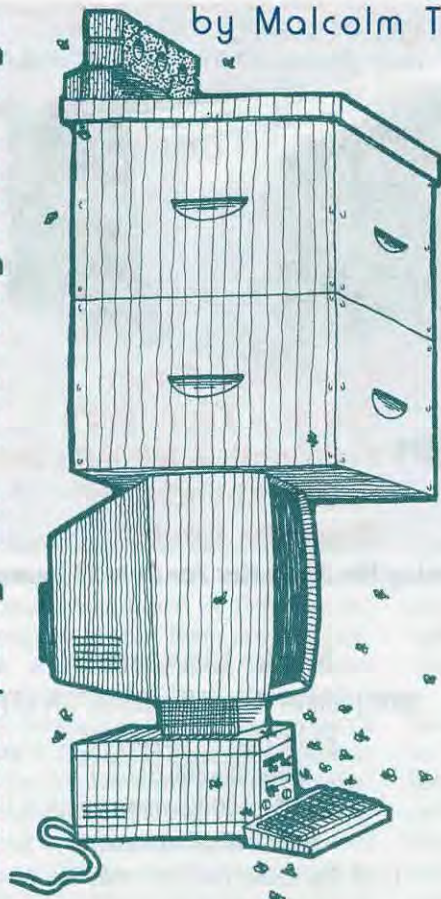
All breeder stock is selected for Hygienic Behavior.

MasterCard and VISA accepted

"I highly recommend Strachan Apiaries for the best bees, queens, and service. I've purchased packaged bees and queens every year since 1965 and am very satisfied."

Don Smoot, Montana

by Malcolm T. Sanford



I have mentioned in several **previous columns** that the World Wide Web is a two-way street. Not only can information be found there, but the medium makes it extremely easy to publish one's own findings. This is best seen presently at **Barry Birkey's site**. His Point of View section (the URL is <http://www.beesource.com/pov/index.htm>) contains the comments of **Ed and Dee Lusby**, whose "...non-chemical 'back to basics' approach to beekeeping leads them to spend much of their spare time in libraries where they search for obscure bits of information which, when assembled in logical order, yield insights into old problems such as bee kills due to the use of pesticides, and new problems like parasitic mites. Such has been their pursuit of an understanding of the importance of comb cell diameter, an issue emanating out of their bee breeding activities and search for non-chemical methods of resolving disease and mite problems." This is the source of the survey one finds at Barry's site concerning cell size: "What size is your foundation? Simply measure across 10 cells on your foundation and write us with the measurement, especially if it does not measure between 5.20 and 5.45 cm. (That's 2-1/16 and 2-1/8 inches). If you do not use foundation, what size is your worker comb? Please measure several worker combs and let us know the measurements. Also, let us know where you are (country, state) as well as, the race of bees, and latitude, longitude & altitude — if you know them. Please send results to: cellsize@beesource.com. **Allen Dick's concept** that too much worrying about one's bees frequently gets beekeepers into trouble; the ideas of the late **Andy Nachbaur** on **bee nutrition**; and use of food grade mineral oil to reduce Varroa popu-

Publishing Your Point Of View On The Web

lations as proposed by **Dr. Pedro Rodriguez** are presented here as well. Perhaps the most documented and intriguing point of view, however, is that by **Dr. Adrian Wenner** concerning the dance language of the honey bee as proposed by the late Dr. Karl von Frisch, for which he won a Nobel Prize.

Dr. Wenner is a **retired professor** from the University of California system. He says the genesis of the dance language hypothesis, which many now take for granted as fact, came from the "shambles" left of the German scientific community at the end of World War II. As part of a program to promote scientists who had achieved solid accomplishments during the war years, Dr. von Frisch, among others, was selected and supported. Dr. von Frisch had published the results of easily repeatable experiments, which suggested that honey bees had a "language." Almost anyone could repeat these experiments, which led to a body of support for the conclusion that naive bees attending a dancing bee would "fly directly out" (as von Frisch phrased it) to the same productive source of nectar or pollen. The notion of testing a hypothesis in those days, according to Dr. Wenner, meant little more than a successful replication of the original experiments.

Dr. Wenner entered the dance language fray in the 1950s. He is one of the few bee scientists who has had commercial beekeeping experience, caging literally thousands of queens for his uncles in northern California. Later he studied electronics and that, along with the development of the portable audio tape recorder, allowed him to record and analyze the sounds of individual bees in the hive. He was surprised to see bees doing the waggle dance also produced a highly structured sound. His training in electronics and physics suggested that the dancing bees in their totally dark hive might be communicating by means of sound signals rather than by visible dance maneuvers described by von Frisch. **Further study** revealed a correlation between sound production time during the straight run portion of the waggle dance and the distance to the food source visited by regular foragers. At that time, Dr. Wenner and others worked under the assumption that bee "language" was fact.

While a student in the 1960s, Dr. Wenner learned the "important distinction" between indirect and direct evidence and realized that all evidence for bee language up to that time had been circumstantial (i.e., indirect). As part of his efforts to design an imitation bee (robot bee) that sent naive bees out to a point source in the field, Dr. Wenner stumbled onto the "disconcerting notion" that bees learn quickly (the conditioned response phenomenon, as with Pavlov and his salivating dogs). However, bee researchers and others had considered bee language an "instinctual signaling system" that did not involve learning. Drs. Wenner and his colleague Dr. Wells published the results of their experiments on learning in honey bees, much of which varied from the results of Dr. von Frisch, who used experienced bees

rather than naive individuals. "The **first set** of experiments relied on a rigorous double control design, in which inexperienced bees would either use information they had obtained from the waggle dance or search for the odor of the food source exploited by experienced foragers. A **second set** relied on a more rigorous strong inference design. In both sets of experiments, searching bees used odor of the target source and ignored any information they might have obtained from the waggle dance before leaving their hive." A reversion to single controlled experiments by investigators, however, closed the door on this line of investigation and Dr. Wenner moved out of bee research into marine biology in the 1970s.

Articles in support of the bee language, hypothesis, according to Dr. Wenner, continued to be published without adequate critical review during the 1970s and 1980s and objections by a single scientist, Ruth Rosen, remained largely ignored by bee language advocates. In 1987 Joe Graham (editor of the *American Bee Journal*) published a **summary article** of Drs. Wenner and Wells, research. And Dr. Wenner re-entered the field of bee research in collaboration with Robbin Thorp of the UC Davis campus in 1988 as they began to **locate and remove** all feral honey bee colonies from Santa Cruz Island, a 96 square mile (25,000 hectare) island offshore from Santa Barbara - part of the Channel Islands National Park. The idea was to remove honey bee competition so native bees could rebound and pollinate native plants more effectively, thereby hastening island recovery toward a more natural state. For more than a decade they recruited scores of volunteers and learned much about colony foraging patterns and **other aspects** of bee biology.

In 1990, Columbia University Press agreed to publish the book, *Anatomy of a Controversy: The Question of a "Language" among Bees*. This volume led to a further examination of how science is accomplished and published. "Under the current anonymous peer review grant system, unfortunately, adversity can lead to the early termination of a project. Another social factor prevails, despite claims to the contrary; the scientific community is uncomfortable with controversy, unless the issue is rather unimportant (see chapter 14). All of this means that discussion of only a very small portion of conflict resolution actually reaches print."

The focus of this article is not to adjudicate the

merits of the honey bee dance language controversy. That will be up to the reader who will find a fully detailed explanation along with references on the Birkey web site **Point of View**. Rather this is described here as an example of how the Internet allows a more full discussion of these matters. As Dr. Wenner states: "The increasingly widespread use of the Internet had a perhaps unanticipated influence on the bee language controversy. No longer could language advocates control expression of divergent viewpoints, as they had done so successfully while serving as anonymous reviewers of manuscripts submitted to journals and as authors of books and articles. During this past decade the language hypothesis has repeatedly surfaced on several **e-mail networks** (e.g., BEE-L, social insects, entomology, comparative psychology, history and philosophy of science)." This newly open atmosphere also permitted the publishing of summaries of work overlooked or ignored earlier, as well as digests of material **important to beekeepers**. He concludes: "Barry Birkey's web site now provides a selection of some of the publications so long ignored and/or suppressed by bee language advocates. In fact, this well may be the first opportunity for former and current graduate students of those language advocates to know that such information exists." **BC**

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

SIMPSON'S BEE SUPPLY

15642 Tiger Valley Road • Danville, OH 43014

740.393.2111 (Please call before pickup)

csimpson@knox.net • Call for catalog

Distributor of **Pierco Inc.**

One-piece Plastic Frame & Foundation
(No assembly required.)

Plastic Snap-in Frames & Foundation

Deep and Medium

Available in **Black** or **White**



THREE BAND ITALIAN QUEENS

Available all summer and fall.

Caged fresh from our yards and rushed to you prepaid airmail.

1-9
\$9.00

10-24
\$8.00

25-99
\$7.00

100-up
\$6.00

Queens clipped - \$1.00 ea.

Queens marked - \$1.00 ea.

APISTAN QUEEN TABS AVAILABLE UPON REQUEST • QUALITY DOES NOT COST - IT PAYS!



THE WILBANKS APIARIES, INC.

Box 12, Claxton, GA 30417
Ph. 912-739-4820 • FAX 912-739-4821



? DO YOU KNOW ?

Fall Management

Clarence Collison

Mississippi State University

The management of honey bees in the Fall generally includes two primary functions, the completion of the work associated with the active honey-producing season, and the preparation of the colony for the next seasonal period. Because of the great variation in the climatic and floral conditions under which bees are kept, the work will vary with the requirements of the colonies for the balance of the active brood rearing period and with their needs during the Winter period. Regardless of your geographical location it is important to have a young productive queen, a large population of young

bees and sufficient food supplies. Colony strength declines as the old bees die off because the emergence of young bees is insufficient to take their place.

Fall and Winter is also a time for the beekeeper to reflect on the past year and attend various types of bee meetings, and workshops. It is also a time to catch up on reading books and magazines to stay abreast of current happenings in the beekeeping industry.

Please take a few minutes and answer the following questions to see how well you are keeping up.

The first 11 questions are true and false. Place a T in front of the statement if entirely true and an F if any part of the statement is incorrect. (Each question is worth 1 point).

1. ___ The pollination of cucumbers requires the transfer of pollen from male to female flowers.
2. ___ Under normal colony conditions we would expect to find a ratio of 1 egg to 2 larvae to 4 pupae in the broodnest.
3. ___ Apitherapy is restricted to bee venom therapy.
4. ___ Bee venom injections to humans enhances the response of the immune system.
5. ___ Bumble bees are native to North America.
6. ___ Congestion in the honey supers is the primary cause of swarming.
7. ___ It is against the law to import honey bees into the United States.
8. ___ A drone reared from a laying worker's egg is sterile.
9. ___ Worker honey bees frequently destroy unfertilized eggs and drone larvae if rearing conditions are not optimal.
10. ___ Goldenrod is an excellent source of nectar and pollen in late summer and early fall.
11. ___ Queen cups are normally found in the hive throughout the year.

(Multiple Choice Questions, 1 point each)

12. ___ The small hive beetle belongs to the family:
A. Cerambycidae- Long Horned Wood Boring Beetles
B. Carabidae- Ground Beetles
C. Tenebrionidae- Darkling Beetles
D. Nitidulidae- Sap Beetles
E. Staphylinidae- Rove Beetles

13. ___ The greatest diversity of honey bee species in the world occurs in:

- A. Africa
- B. Asia
- C. Europe
- D. Australia
- E. South America

14. ___ The first country to report *Varroa* mite resistance to fluvalinate (Apistan Strips) was:

- A. Brazil
- B. Italy
- C. United States
- D. New Zealand
- E. South Africa

15. Name two diseases/maladies of honey bees that are diagnosed by dissecting adult honey bees. (2 points)

16. Name the honey bee disease that is caused by *Paenibacillus larvae*. (1 point)

17. Antibiotic extender patties were originally developed in the early 1970's for the control of _____. (1 point).

18. Name three components normally used in the making of sugar candy that is used for feeding colonies found short of food stores. (3 points)

19. Why is late fall an ideal time to treat for both tracheal and *Varroa* mites? (2 points)

20. Name two situations which result in a colony being headed by a drone layer. (2 points)

ANSWERS ON PAGE 55

45 YEARS OF FOULBROOD

Dr. Bill Wilson

American and European foulbrood (AFB & EFB) are bacterial diseases of honey bees (*Apis mellifera*) that are highly contagious and spread rapidly between bee colonies and apiaries. Before the mid-1940s, the only reliable means of limiting the spread of AFB (*Paenibacillus larvae*) was to shake adult bees onto wax foundation or kill the colonies and burn or boil all of the combs and wooden equipment. These practices were somewhat beneficial in slowing the spread, but they were expensive in terms of labor and destruction of equipment. Discovering that sulfa drugs and several antibiotics had the capacity to control foulbrood diseases ushered in a new era that contributed greatly to making large-scale commercial beekeeping viable and profitable. The widespread use of Terramycin improved the health of honey bee colonies nationwide to the point where many beekeepers became somewhat complacent in terms of foulbrood management. Many beekeepers used one or two Terramycin extender patties (Terra-Patties®) per year with excellent results. Unfortunately, AFB-diseased honey bee colonies were discovered in Wisconsin in 1996 that did not respond to treatments with Terramycin. Samples of AFB-diseased larvae were sent to the USDA-ARS Bee Lab in Beltsville, Maryland for verification of antibiotic resistance. *Paenibacillus larvae* is indeed resistant to Terramycin. New chemical treatments are being tested. However, bee stocks that resist foulbrood are the best long-term solution. If beekeeping in North America is to remain a viable agribusiness, we must prevent AFB from again becoming widespread.

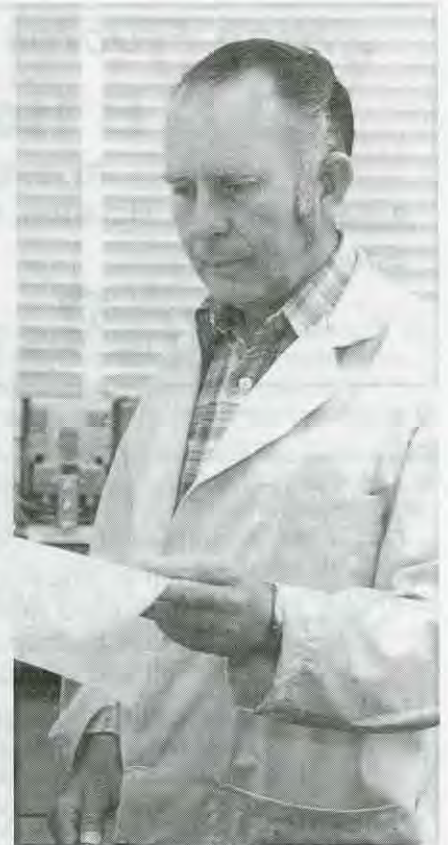
In the world arena of bee disease control, a monumental event occurred in the mid-1940s when two professors at the University of Missouri discovered that sodium sulfathiazole controlled American foulbrood disease (AFB) (Haseman 1946). This was the first reliable and effective chemical treatment against AFB. Administering sulfa as a powder or mixed in sugar syrup did not require the immense amount of labor that shaking bees onto new foundation demanded, or the expensive practice of killing colonies and burning the contaminated equipment. AFB is caused by *Paenibacillus larvae*, formerly called *Bacillus larvae*.

At first, some bee inspectors did not accept sulfa treatment as a valid way of controlling AFB, but eventually most beekeepers and inspectors realized the economic value of protecting colonies with the chemical treatment. It wasn't long before the practice became widespread. From that point on, the ancient scourge of beekeeping, foulbrood disease, lost much of its impact.

Although sulfa worked well

against AFB, the medication did not control European foulbrood (EFB, caused by *Melissococcus pluton*, formerly *Streptococcus pluton* and earlier *Bacillus pluton*), and beekeepers reported heavy outbreaks of EFB in several parts of the U.S. in the 1950s. A few bee inspectors burned EFB-infected colonies, but in most states the law specified the burning of AFB-infected equipment only. As a consequence, beekeepers were left to battle EFB alone. Beekeepers' home remedies were ineffective and EFB continued to inflict serious damage.

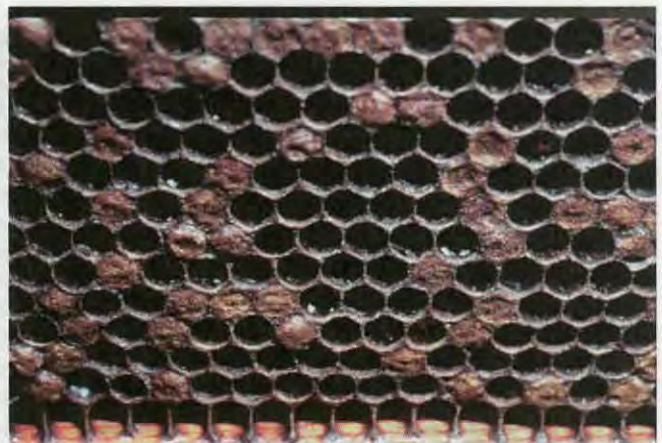
My first research assignment was to assist Professor Joe Moffett in testing antibiotic compounds for EFB control in commercial apiaries in southern Colorado in 1955 (Wilson & Moffett 1957). At that time, EFB was a terrible problem, with many large apiaries containing numerous colonies that were "rotten" and several thousand colonies across Colorado were infected. Beekeepers were desperate for an effective treatment since diseased colonies were too weak to rear queens



Dr. Bill Wilson in 1980.

in the Spring or produce honey during the Summer. Over the years, beekeepers had noticed that EFB disappeared during hot weather and abundant nectar flows. However, EFB was no longer spontaneously disappearing during the Summer in Colorado (Holzberlein 1953).

In the 1950s, bee researchers in Canada (Jamieson 1953) and in the U.S. (Gochnauer 1951, 1953; Moffett 1954) reported effective control of foulbrood (both AFB and EFB) using oxytetracycline HCL (Terramycin® or TM) and other antibiotics. Some of the antibiotics not only controlled foulbrood but they also had a stimulatory effect on the bees (more brood and honey produced) (Moffett, Wilson & Parker 1958). During these studies, erythromycin (Gallimycin®) was found to be exceptionally effective against EFB, but U.S. Food & Drug Administration (FDA) approval was never obtained for its use in beehives (Wilson & Moffett 1957; Wilson 1962). Streptomycin also worked very well for controlling AFB, but the antibiotic often ended up as a highly per-



EFB (left) shows the still curled larvae in the bottoms of the uncapped cells. They generally die before the cell is capped. While AFB (right) shows scales lying along the bottom edge of the now uncapped cells, they generally after the cell is capped. EFB remains are fairly easy to remove, but AFB scales cling tightly and are difficult to remove.

sistent residue in extracted honey, so it was not approved as a legal treatment.

When I completed my Master's degree in 1957 and left Colorado for military service, EFB was causing serious colony losses and could be found in most beekeeping operations. Some beekeepers were nearly bankrupt from continuing losses. Beekeepers responded with large-scale treatment programs utilizing Terramycin (TM-10 or TM-25). The antibiotic was administered in sugar syrup or dry powdered sugar mix sprinkled across the top bars in the brood nest. The use of sodium sulfathiazole was eventually discontinued because it didn't work against EFB and when used for AFB, it left persistent residues in extracted honey.

In 1960, I was hired by Colorado State University to teach honey bee biology and general entomology and conduct bee research. One of my first studies focused on EFB occurrence at high elevations. I started by contacting beekeepers to obtain 30 EFB-diseased colonies for use in the project. Much to my amazement, virtually no one had colonies with active cases of European foulbrood. It seemed obvious that in a three-year period, Terramycin had not only controlled, but nearly eliminated EFB. The past 45 years of widespread use of Terramycin against AFB has apparently also kept EFB under control. EFB has rarely been a problem in the United States since 1960, except for an occasional outbreak on the East Coast during Spring cranberry pollination.

Commercial beekeepers and hobbyists started utilizing large quantities of powdered sugar/Terramycin mix in the mid-1950s against AFB at a time when nearly every bee operation had a serious problem with the disease. The drawback with this treatment was that adult workers ingested the powdered sugar mix within a couple of days. Studies demonstrated that Terramycin needed to be present continuously for five to six weeks or longer in the Spring while worker bees cleaned out dead larvae, pupae and dark scales laden with *P. larvae* spores. If the supply of Terramycin was used up before the diseased brood had been removed, the workers would spread the bacterial spores to healthy larvae and the disease cycle would start all over again.

Bee researchers determined that diseased colonies needed to be dusted with Terramycin on a weekly schedule for five or more times (200 mg of oxytetracycline each dusting with a total of 1,000 mg or more per treatment period per colony). This schedule was difficult for commercial beekeepers with widely scattered apiaries. Some bee yards were more than 100 miles from the center of the beekeeper's operation. Travel costs were high.

Beekeepers tried to solve the need for frequent treatment by feeding antibiotics in large quantities of sugar syrup, but this practice was time-consuming and expensive. Another problem was the breakdown of Terramycin in the water-based syrup over a period of a week or two, which reduced the effectiveness of the

treatment. Nevertheless, some commercial beekeepers have successfully used water-soluble Terramycin mixed into sugar syrup where syrup feeding is an established part of Spring management. Knowing the problem with breakdown, beekeepers often wait to add the Terramycin until the day they actually feed the syrup to the bees.

As a partial answer to the problem of dispersed colonies, many beekeepers placed diseased hives in an isolated apiary near their home or honey house and called it a "hospital yard." With the diseased colonies in one place it was easier to watch them and to give weekly dustings with an antibiotic mix. This system of disease management worked rather well, and hundreds of colonies were cleaned up each year. When there was no further visible evidence of foulbrood in colonies, and they remained healthy for two years, they were often placed back in the main beekeeping operation. In cleaning up AFB-diseased colonies, many years ago Dr. Eckert of the University of California recommended rotating infected combs from the outside of the brood box to the center several times during Summer months. He also advocated switching the upper brood box with the lower box in Spring. This hive manipulation caused worker bees to clean many more cells (Eckert 1953). During this cleaning, it is vital to have a constant supply of a chemotherapeutic, e.g., Terramycin, present in the hive for several weeks.

Another way to control AFB,

Continued on Next Page



Applying terramycin/sugar to a colony is effective, but time consuming.

and other honey bee diseases, is to "sterilize" bee comb and equipment using ethylene oxide (ETO) fumigation or exposure to gamma radiation. Some states have obtained approval to use ETO to sterilize bee equipment, but this fumigant is under review by the EPA (Shimanuki & Knox 1997). Both methods require trained personnel, expensive equipment and utilization of safe fumigation or radiation chambers.

In 1961, with help from a student assistant, I developed a new method for applying chemical treatments to bee colonies called antibiotic patties (Wilson & Sholdt 1963). The patty consisted of heated honey, powdered sugar plus an antibiotic. The mix was kneaded to form stiff queen-cage candy before being made into a pancake-sized patty. These patties slowed consumption of the treatment material to seven to 10 days and thus extended the time the antibiotic was in the hive. This was an improvement over dusting with powdered sugar that usually lasted three days. However, to be highly effective, the patty needed to last for five to six weeks or longer.

In 1970, a longer-lasting patty was developed by myself and the staff at the USDA-ARS Bee Lab in Laramie, Wyoming. The new patty contained 1/3 lb (151 gm) of vegetable shortening (Crisco®), 2/3 lb (303 gm) of granulated table sugar (sucrose) and 2 tablespoons (approx. 18 gm) of soluble Terramycin powder (TM-25 in 6.4 oz package). The patty mix could also be made with petroleum jelly (Vaseline®) and powdered sugar, but the consistency was often too sticky. The patties were called antibiotic extender patties or Terramycin extender patties (Wilson et al. 1970). Over the years, various

names have been given to the patties and the amount of ingredient has been changed often. Unfortunately, the changes were not based on research results, and some patties ended up with very small quantities of Terramycin. Under-dosing probably resulted in ineffective AFB treatment and poor disease control.

As a side note, research scientists working in northern Mexico and southern Texas in the mid-1980s noted that colonies given Terramycin or extender patties seemed to have fewer tracheal mites (F. Eischen, personal comm. 1985). Wilson (1990) suggested that introducing vegetable oil into a beehive might prevent tracheal mites (*Acarapis woodi*) from identifying and entering young adult bees, thus hindering the spread of this parasitic mite. Delaplane (1992) and others demonstrated that vegetable oil and sugar patties with or without antibiotics gave significant control of tracheal mites.

During the original planning on the size of each extender patty and the amount of Terramycin (active ingredient is oxytetracycline HCl), we followed the Terramycin label that included bee medication directions and had FDA approval. The instructions required each single colony dusting of Terramycin and powdered sugar to contain 200 mg of oxytetracycline HCl. Since six weekly dustings were usually necessary to clean up lightly AFB-infested colonies, we decided that each 1-pound (454 gm) patty should contain the equivalent of five to six dustings or a total of 1,000 to 1,200 mg of oxytetracycline HCl (Wilson et al. 1970). We soon learned that the 1-pound patty was highly effective in controlling AFB, but it was too large, and the treatment remained in the

hive for more than two months (Wilson et al. 1971). In studies at Laramie in the 1970s, we doubled (2,400 mg) and tripled (3,600 mg) the amount of Terramycin in an extender patty without the new formulations being rejected by the bees and without obvious toxicity to the bees or brood (W. Wilson, unpublished data, 1975).

Since the patty had to be consumed or removed before the main nectar flow and honey storage, we suggested that each patty be made 1/2 lb in size with 600 mg of oxytetracycline HCl. Fortunately they worked well for AFB control (Wilson & Elliott 1971). However, hindsight indicates that 1,000 mg might have been better. This smaller patty was consumed in four to six weeks by strong colonies. Frequently, weak colonies failed to eat the patty, and had to be dusted with TM in powdered sugar.

Commercial production of Terramycin patties is done currently by Mann Lake Ltd. of Hackensack, Minnesota. Mann Lake sells them under the trade name of Terra-Patties® (each patty is 6 oz and contains 1,000 mg of oxytetracycline HCl; see Mann Lake supply catalog, 2000). The best time to feed Terra-Patties® is in the Spring just before or just after the main nectar flow, and when sugar syrup is not being fed (J. Thomas, personal comm. 2000).

After nearly 45 years of excellent control of foulbrood, a few cases of AFB that did not respond to Terramycin were reported in the U.S. in 1996 (D. Knox, personal comm. 2000). In 1997, several honey bee colonies in Wisconsin were given heavy dustings of Terramycin and powdered sugar multiple times with no obvious reduction in the amount of AFB-diseased brood (G. Waller, personal comm. 1998). The first reported cases were apparently in small bee operations in the northern Midwestern states that were buying nucs in the Spring and exchanging brood combs (H. Shimanuki, personal comm. 1999). Recently, resistance has been found in large migratory beekeeping operations in other places. Dave Knox of the USDA-ARS Bee Lab in Beltsville has used standard bacteriological tests to demonstrate narrowing zones of inhibition in AFB samples from 17 states. (Zones of inhibition

are thin halos on nutrient agar where bacteria do not grow due to the presence of an antibiotic contained in an absorbent paper disk (on the surface of agar gel.) Narrowing zones are an indication of increasing resistance to an antibiotic - Terramycin in this case.

Some individuals have claimed that Terramycin extender patties caused *P. larvae* to become resistant to Terramycin. This is not correct since resistance first showed up in Argentina in the early 1990s, and they were not using extender patties (H. Shimanuki, personal comm. 1999). Terramycin resistance also appeared in Canada in the late 1990s, and they do not have a history of using Terramycin extender patties. Long-term exposure to Terramycin or improper dosage levels apparently created the bacterial resistance. However, patties did provide the means by which the antibiotic could be kept in the hive for many weeks or longer. It has been reported that some beekeepers kept patties inside their colonies for several months to a year. Leaving treatment materials in a hive longer than the label recommends is not a good idea since it represents a violation of the label and can contribute to the development of bacterial resistance to Terramycin.

Applying Terramycin in a powdered sugar mix has always been a convenient method of administering the antibiotic. However, when the treatment schedule is erratic and the bees consume all of the antibiotic before the brood nest has been properly cleaned, the amount of AFB cycles up and down, but the disease is never well-controlled. This type of imprecise treatment along with low doses or outdated Terramycin probably contributed to the development of resistance in *P. larvae*.

When used properly, antibiotic extender patties offer the best method of applying an antibiotic such as Terramycin since they render a uniform dose of treatment chemical over an extended period. Also, the therapeutic integrity or stability of Terramycin is protected for several weeks by the shortening (Wilson et al. 1971; Gilliam & Argauer 1975). Important review articles on using Terramycin in bee colonies were written by Delaplane & Lozano (1994) and Sanford (1998).

Although there are several non-chemical ways of reducing the impact of foulbrood on bee colonies, the most promising are bee stocks that have heritable resistance to AFB. Dr. O.W. Park (1936) was the first scientist to conduct studies on why some colonies were able to survive an AFB infection. The mechanisms of resistance were explored in meticulous studies by Woodrow (Woodrow & Holst 1942) in the early 1940s. The definitive research on the mechanisms, microbiology and behavioral genetics of disease resistance was accomplished by Dr. W.C. Rothenbuhler and his graduate students at Iowa State and Ohio State Universities (Rothenbuhler & Thompson 1956). Much of Rothenbuhler's work centered around a stock of honey bees known as the Brown line (named after E.G. Brown, the beekeeper who selected this stock) that was highly resistant to AFB. The Brown line was highly inbred, difficult to maintain and eventually died out. Dr. Rothenbuhler pioneered the work on hygienic behavior in bees (Rothenbuhler 1964). The more recent development of hygienic stocks has been mainly under the direction of Mr. Steve Taber (1992) and Dr. Marla Spivak (Spivak & Reuter 1998). Hygienic lines of bees often show resistance to more diseases than just AFB. An outstanding review of hygienic behavior in honey bees was published recently by Spivak and Gilliam (1998).

What does the future hold for AFB control? Many years ago, Hitchcock et al. (1970) demonstrated that tylosin controlled AFB. Peng et al. (1996) conducted extensive studies on tylosin and found it highly effective against AFB. Tylosin and other compounds are currently being evaluated by ARS personnel from Weslaco and Beltsville for use in foulbrood control, and especially for control of the strain of *P. larvae* that is resistant to Terramycin. Finding new chemotherapeutic controls is critical for the short-term future of commercial beekeeping where treatments must not only be efficacious but also cost-effective in terms of labor and dollar outlay.

Long-term control strategy needs to include AFB-resistant bee stocks that are widely available to all beekeepers. The most likely stock



Extender patties reduce the labor involved in application, but have their own drawbacks.

will come from a hygienic-behavior breeding program. Furthermore, beekeepers should be encouraged to inspect the health of the brood in their own colonies at least once per year. Heavily AFB-infested colonies or those that fail to respond to chemical treatments should be destroyed. Combs from diseased hives should be burned or the wax recovered by melting at a high temperature, and the resulting spore-contaminated honey destroyed.

Although Terramycin can clean up AFB-diseased colonies if enough treatments are made over a long period of time, the best use of Terramycin is still **prevention** of AFB especially in an apiary where an AFB colony has been identified. Some scientists now believe that a combination of control measures known as integrated pest management (IPM) will be the best approach for future foulbrood control and will avoid development of antibiotic resistance in AFB in the future (Nasr & Kevan 1999).

Very soon, the U.S. beekeeping industry could be faced with a widespread epidemic of American foulbrood disease that would be just as destructive as uncontrolled infestations of *Varroa* mites. This scenario could take place if beekeepers fail to control Terramycin-resistant AFB and scientists fail to develop an effective substitute for Terramycin within the next year or two. For beekeepers who haven't faced a bad outbreak of AFB, it's hard to visual-

Continued on Next Page

ize the seriousness of the situation. If *P. larvae* spores are spread into honey-storage supers, in addition to the brood nest combs, it could take several years and a lot of work before the combs are cleaned up and disease free. The beekeeping industry must work diligently and remain alert to this emerging problem to avoid a catastrophic situation.

Kim Flottum (personal comm. 2000) made an interesting comparison between colonies dying from a *Varroa* infestation and an colonies dying from AFB infection. He said that bee equipment from colonies killed by *Varroa* can be stored for a couple of months, and then when healthy bees are installed, they will not have *Varroa*. However, bee equipment from colonies that have died from AFB can be stored for many months or years before healthy bees are again installed; unfortunately, the outcome is always more AFB-diseased brood. AFB is difficult to eliminate. Prevention is the best practice.

It's important to understand that "homemade" remedies are often illegal. The only legal chemical treatments for AFB and EFB have well-defined instructions and contents on a label that has been approved by the EPA or FDA. All chemicals and methods of application that do not have specific approval are not legal treatments, and consequently, should not be used. ☐

REFERENCES CITED

Delaplane, K.S. 1992. *Controlling tracheal mites (Acari: Tarsonemidae) in colonies of honey bees (Hymenoptera: Apidae) with vegetable oil and menthol.* J. Econ. Entomol. 85:2118-2124.

Delaplane, K.S. and L.F. Lozano. 1994. *Using Terramycin® in honey bee colonies.* Amer. Bee J. 134:259-261.

Eckert, J.E. 1953. *The use of sulfathiazole in relation to American foulbrood disease of honey bees.* J. Econ. Entomol. 46:382-383.

Gilliam, M. and R.J. Argauer. 1975. *Stability of oxytetracycline in diets fed to honey bee colonies for disease control.* J. Invert. Pathol. 26:383-386.

Gochnauer, T.A. 1951. *Drugs fight foul brood disease in bees.* Minn. Farm Home Science 9:15.

Gochnauer, T.A. 1953. *European foulbrood disease in Minnesota.* Amer. Bee J. 93:326-327.

Haseman, L. 1946. *Some state apiarists are opposed to sulfa drug treatment.* Amer. Bee J. 86:276-277.

Hitchcock, J.D., J.O. Moffett, J.J. Lockett and J.R.

Elliott. 1970. *Tylosin for control of American foulbrood disease in honey bees.* J. Econ. Entomol. 63:204-207.

Holzberlein, J.W. 1953. *European foulbrood meets its master.* Amer. Bee J. 93:328-329.

Jamieson, C.A. 1953. *The control of European foulbrood.* Amer. Bee J. 93:323-324.

Moffett, J.O. 1954. *The use of antibiotics in controlling European foulbrood of honeybees.* Colorado Agric. Experi. Sta. Tech. Bull. 53, Ft. Collins, CO.

Moffett, J.O., W.T. Wilson and R.L. Parker. 1958. *The effect of penicil, tetracycline and erythromycin on adult bees, brood-rearing and honey production.* Amer. Bee J. 98:22-24.

Nasr, M.E. and P.G. Kevan. 1999. *Diseases and parasites, eradication or management: what strategy for honey bee health?* Bee World 80:53-54.

Park, O.W. 1936. *Disease resistance and American foulbrood.* Amer. Bee J. 76:12-15.

Peng, C.Y-S., E. Mussen, A. Fong, P. Cheng, G. Wong and M.A. Montague. 1996. *Laboratory and field studies on the effects of the antibiotic tylosin on honey bee Apis mellifera L. (Hymenoptera: Apidae) development and prevention of American foulbrood disease.* J. Invertebrate Pathol. 67:65-71.

Rothenbuhler, W.C. 1964. *Behaviour genetics of nest cleaning in honey bees. I. Responses of four inbred lines to disease-killed brood.* Animal Behaviour 12:578-583.

Rothenbuhler, W.C. and V.C. Thompson. 1956. *Resistance to American foulbrood in honey bees. I. Differential survival of larvae of different genetic lines.* J. Econ. Entomol. 49:470-475.

Sanford, M.T. 1998. *Re-examining oxytetracycline for foulbrood control.* Apis. 16:1-4.

Shimanuki, H. and D. Knox. 1997. *Summary of control methods.* Ch. 22, pp 493-512. In: R. A. Morse and K. Flottum, Honey Bee Pests, Predators, and Diseases, 3rd ed., A. I. Root Co., Medina, OH.

Spivak, M. and G.S. Reuter. 1998. *Honey bee hygienic behavior.* Amer. Bee J. 138:283-286.

Spivak, M. and M. Gilliam. 1998. *Hygienic behaviour of honey bees and its application for control of brood diseases and Varroa.* Parts I & II. Bee World 79:124-134 & 169-186.

Taber, S. 1992. *Resistant bees.* Glean. Bee Culture 120:78-79.

Wilson, W. T. 1962. *Control of European foulbrood using two erythromycin formulations and yearly disease recurrence.* Amer. Bee J. 102:351-354.

Wilson, W. T. 1990. *Tracheal mite control.* Amer. Bee J. 130:186.

Wilson, W. T. and J. O. Moffett. 1957. *The effect of erythromycin and other antibiotics on the control of European foulbrood of honey bees.* J. Econ. Entomol. 50:194-196.

Wilson, W.T. and L.L. Sholdt. 1963. *Antibiotic patties for foulbrood control.* Amer. Bee J. 103:330-332.

Wilson, W.T., J.R. Elliott and J.J. Lockett. 1970. *Antibiotic treatments that last longer.* Amer. Bee J. 110:348 & 351.

Wilson, W.T. and J.R. Elliott. 1971. *Prophylactic value of antibiotic extender patties in honey bee colonies inoculated with Bacillus larvae.* Amer. Bee J. 111:308-309.

Wilson, W.T., J.R. Elliott and J.D. Hitchcock. 1971. *Antibiotic extender patties for control of American foul brood.* J. Apicult. Res. 10:143-147.

Woodrow, A.W. and E.C. Holst. 1942. *The mechanism of colony resistance to American foulbrood.* J. Econ. Entomol. 35:327-330.

Disclaimer: Mention of a commercial product does not constitute an endorsement of the product or trade name by the USDA nor does it imply registration under FIFRA as amended.

Bill Wilson served as the Lead Scientist for the Honey Bee Group of the USDA Beneficial Insects Research Unit in the Kika de la Garza Subtropical Ag. Research Center in Weslaco, TX. He retired at the end of August.

HARRELL & SONS, INC.
 Three Banded Italian Package
 Bees and Queens
 P.O. Box 215 • Tuskeena St.
 Hayneville, AL 36040
 PH. (334) 548-2313 (334) 548-2262

**QUALITY BRED ITALIAN &
 CAUCASIAN QUEENS**
HOMAN-MCMASTERS APIARIES
 503 CR 520 • Shannon, MS 38868
 662.767.8923 • 662.767.3880 • FAX 662.767.3803

SUMMER PRICES START MAY 15, 2000
MORRIS FAMILY APIARIES
 221 West Tollison • Baxley, GA 31513 • (912) 367-0638

<u>Italian Queens</u>	
1-9	\$11.00
10-49	\$8.00
50-UP	\$6.00

Clipped/Marked 50¢ Each. Apistan Queen Tabs 25¢, available upon request.
 State Inspected - 27 Years Experience - All hives treated and fed Fumidil-B.
"Our Queens Give You Hives!"
 TERMS: 20% down. Balance Due 2 weeks prior to shipping.

MANAGING 100

Production

Rick Green

Introduction

This is the second article in a four-part series about managing a small bee business. The first (see September 2000, *Bee Culture*) was about yard activities with the accent on speed. In a future article, marketing, selling, and business aspects will be described. This month the focus is on production techniques - how to get the products from the hive into pails and containers, or made into candles, soap, or balm, and how to take slides for school presentations. The final article in the series will be devoted to your questions and comments so feel free to share your thoughts.

Extracted Honey & The Honey House

Since most of the honey consumed in this country is liquid, a typical bee operation has a big investment in extraction equipment. All of my processing equipment is stainless steel. The diagram is an outline of the flow. The extracted honey and wax mixture is heated in a large clarifying pan that has baffles to allow the wax to rise and separate from the honey. The pump pushes the honey to an elevated filter and gravity does the rest. The honey flows down to a holding tank and then into pails. Any air bubbles put in the honey by this process rises and disappears within the pails in a few days. I have 170 pails and recommend soft covers that peel on and off easily and do not break.

Cappings fall from the flail uncapper into a wheelbarrow below and are dumped into a large tank

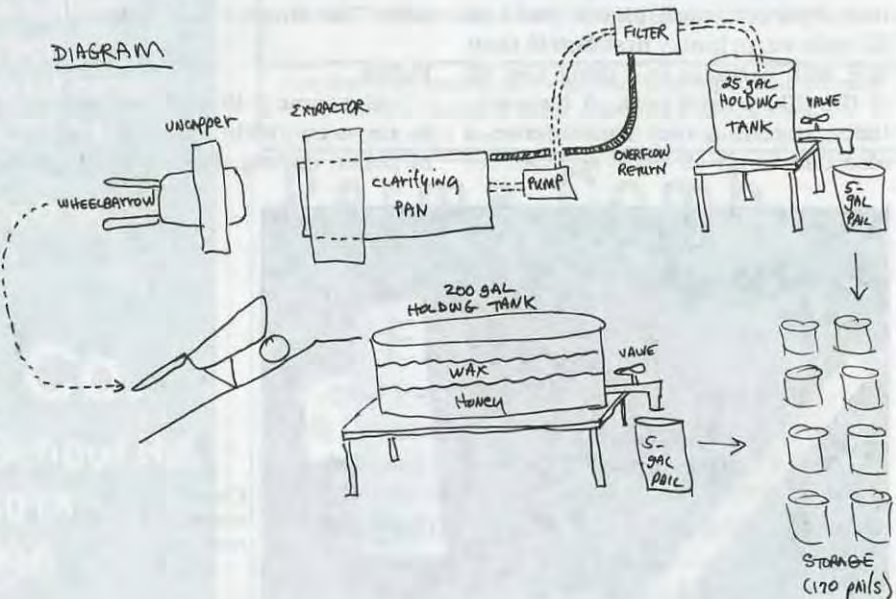
lined with a sheet of plastic. Gravity, time, and the warming sun separate much of the wax and honey. The remainder is heated in a wax processor. I have tried capping spinners and have discovered that with this size operation, spinners are too expensive and time consuming for what little additional honey can be reclaimed.

The honey house is a 24' by 24' garage with a non-slip gravel floor. I back the truck into the garage next to the uncapper so the only major lifting occurs in the bee yards to load the filled supers into the truck. I have given up on blowers and brushing the bees. Two fume boards alternating works nicely. I medicate and then return one wet super to each of the hives for an optional fall

crop. The remaining supers are stacked outside with a cover and are left for the bees from the home yard to clean. Empty wet pails are also left out for the bees to clean.

An insulated mouse-proof, walk-in room is a must. Products are held here until the next farmer's market day, and the room also doubles to make cream honey. A small thermostatically controlled heater maintains 58°, the desired temperature for setting the cream. This works because the outside temperature averages less than 58° in this area except for the few hottest months of the summer.

A small refrigerator holds pollen, finished bee balm, baked goods, and soap ingredients that would otherwise spoil.



Continued on Next Page
29



My holding tank setup.

Also, be sure to over supply your honey house with power. I have had to run an extra line to accommodate growth. Simultaneously running heaters, uncappers, extractors and a honey pump places a large demand on the circuit breakers for the three, sometimes six days out of the year this equipment is used!

I have thought that all of this equipment could be placed on a truck and hired out to extract honey for a profit. Chicken farmers do something similar. All of the equipment needed to kill, heat, remove the feathers, eviscerate, and clean the birds is put on a trailer and is loaned within the co-op of chicken farmers. Beekeepers cooperating in such a way could save money.

Bottling

A water-jacketed 200-pound bottling tank is sufficient for the 10,000 pounds of honey I bottle each year. A pail holder allows every bit to drain from each pail. For flavored honey I use separate small plastic pails to fill with warm honey first and to then mix with extracts so I don't use all of the 200-pound tank. A temperature gauge is a nice convenience. I also use an on-off valve so I can re-

move the bottling valve without draining the tank. And don't drain the tank all the way when you do bottle because impurities float to the top. By always leaving a few inches of honey in the tank the valves don't get clogged as often. When you finish bottling, add a pail of honey to the tank to cool the remainder in the tank to minimize damage due to heat. A warm pan of water and a washcloth to clean the occasional spills is a must. I also have a TV and radio nearby. Get comfortable.

Wax Processing

Drained cappings, broken candles, purchased chunks of raw wax all get thrown into a wax processor for rendering. Place enough water in the processor to cover the heating element. Heat the wax and water for a few hours. A thorough stirring causes everything but wax to drop and the pure wax to rise to the top. I remove the wax with a large ladle. Double valves are unnecessary. The simpler the better.

Pollen

Get some pollen traps. Each trap in my area yields about 30 pounds of pollen during the season. Collect

the pollen every few days especially during wet weather and spread it on a mouse-proof screened rack for about 10 days in a greenhouse. A large flat surface and straight edge is all that is required to spread the dried pollen into thin layers to see and then remove impurities. The traps pay for themselves in a single season.

Cream

One 5-pound pail with a gate near the bottom is all that is needed to make cream honey. For seed I periodically buy a good quality cream. I mix in a 10-to-1 ratio my cooled honey with purchased cream. A heavy-duty drill is a must or you will be replacing small drills regularly. The mixing blade from Betterbee works nicely. Once mixed, the tubs and containers I use are filled. I leave about 10% of the mix in the pail to set and this becomes seed for the next batch. When the crystals eventually become coarse, buy more cream and start over.

Comb

Comb is a relatively small market so I devote little time to it. In July I use my strongest hives with the fewest supers. These hives were probably smaller splits from the recent spring. Add a Ross Round system on top and the bees do the rest.

Soap

Vegetable soap is easy to make and helps give that important dimension to your product line - variety. A large mold and a two-handed knife to trim the blocks makes a hundred pounds at a time. I make one scented and one unscented variety with wax and honey as ingredients, besides lye and oils. Experiment small but for production make a large single block at a time and then cut it into saleable pieces. I have opted for the rough-cut look.

Balms, Etc.

Elaine White's book *Super Formulas* has 360 useful product recipes that contain honey and beeswax. From skin products, sealing wax, and polish to artistic products such as Ukrainian Easter Eggs and Christmas Ornaments - there are sufficient product ideas to suit your customer's varied interests. Variety sells, but more on that in the next



Cleaning pollen essentials. Sell some next year.

article.

Candles

There are three tricks to make candles. I use the self-wicking flexible molds. These molds are relatively easy to work. Each time you pull the candle from the self-wicking mold, the wick for the next candle is drawn up from the bottom of the mold into place ready for the next pour. The cooled wax usually comes free without much effort and they come in an amazing variety. Trick #1: have plenty of molds. The setup time to remove the candle and prepare for the next pouring is so time consuming that you might as well pour 50 or more candles at a time. I heat 20-25 pounds of wax at a time and make 18 large votives, 10 small votives, 25 tapers, tea lights, carved eggs, skeps, plaques from European molds, and small 1-oz, 4-oz, and 1-lb chunks. Trick #2: wrap the wick onto spools and hang these beneath the molds. A homemade bench with small holes to allow the wicks to pass between the mold above, and the spools below, works nicely. Initially threading the mold is time consuming


so by using self-wicking molds and a spool of wick you only need to thread the mold once. This also saves wear-and-tear on the molds. Trick #3: learn the temperament of each mold. Most molds give up their candle easily two or more hours after they have been poured. The Carved egg on the other hand must be removed after four hours, not longer, or you will have a tough time removing it later on. If you attempt to remove it before the four hours, the wick pulls through the warm wax.

Posters

I have many ideas but I am a lousy artist. A cartoonist I met can take an idea from words and my crude sketches and after a couple of iterations convert it into professional looking poster, label, graphic for stationary, or sign. If you can't draw then partner with someone that can.

Slides and Postcards

A big part of my business is doing presentations for schools. I send out mailers and give over 100 pre-

sentations a year. This revenue stream is important. It usually occurs in the Spring and Fall of the school year and doesn't interfere with the busy Summer months. I use a SLR Cannon Rebel model but most importantly I invested in an expensive 1:1 macro lens. My 50+ slide presentation is down right good if I do say so myself! I show close-ups of inside the hive, the bloom sequence, Winter scenes, my products, other stinging insects, and key honey bee behaviors such as the dance, fanning, guarding, and swarming. From selected slides I have made one postcard and plan others. There are businesses on the net that specialize in rendering your pictures/slides into postcards. One hint for taking pictures of busy insects is this - catch the bug, cool her in the freezer for a few minutes, then quickly place her on a flower, you now have about 4 minutes in which to take your picture before she flies away! 

Rick Green can be reached at 8 Hickory Grove Lane, Ballston Lake, NY 12019, email: gothoney@aol.com

POLLEN TRAP

Our pollen trap advantages

Best Gauge of health of your queen
Makes you a better beekeeper
You gather *more* nectar - a lot more
You triple and more your total net profit from pollen sales
Keeps colony with domestic bees
African queen cannot get in

CC Pollen Co.

3627 E. Indian River School Rd.

Phoenix, AZ 85018

1-800-875-0096



"An Association Strictly For Beekeepers"
THE AMERICAN HONEY
PRODUCERS ASSOCIATION

The AHPA is the **only** national beekeeping organization that reserves its voting privileges for beekeepers. All segments of the honey industry are welcome, but only our beekeepers have a vote in the organization.

Join and Help us:

- ★Promote U.S. Honey
- ★Promote Bee Research
- ★Stop Pesticide Abuse Near Bees
- ★Educate Congress of our Beekeeping Needs
- ★Keep the Beekeeping Industry Updated with our *Honey Producer* Publication

For more information and a membership application contact:


536 Ashmont Rd. • Madison, SD 57042

Ph: 605-485-2221 Home Ph: 605-256-4700 Fax: 605-485-2231

Perma Comb ...

SAVES TIME

SAVES MONEY



One Piece Fully Drawn Plastic Comb
No Construction • No Labor • No Time Lost
Accepted BY BEES • Loved BY BEEKEEPERS
Mediums Only - Use For Brood & Honey

Perma-Comb Systems

22543 Ventura Blvd., Dept. 1C Ste. 222-A • Woodland Hills, CA 91364

Phone/FAX (818) 224-2191

John Mitchell



DON'T OVERLOOK THOSE NEW SMALL FARMS

These new small farmers don't want to see booms and pallets.

The oft-heard cure for what ails American farms is to consolidate and industrialize. Farmers must "get big or get out," so it would follow that farms are getting bigger and becoming fewer. Actually, no. There are 4 percent more farms now than there were in 1992, when the last recession ended, according to U.S. Department of Agriculture statistics. The average farm has shrunk by 29 acres since 1992, or more than 6 percent. That number is falling because of new small farms, and it is to the advantage of small-but-expansion-minded beekeepers to understand these farmers.

Nearly all of the growth has come among farms with annual revenues of \$10,000 or less. Thirteen states gained in the most recent survey, including the following, which all added at least 1,000 farms each: New York, Georgia, Virginia, Oregon, Michigan, Minnesota, Kentucky, Oklahoma and Mississippi.

California and Texas gained 2,000 farms each.

New farm growth has been especially heavy in certain regions. Since the early 1990s, Utah has added 2,300 farms for a 17 percent increase, Virginia gained 5,000 farms

for an 11 percent increase, Montana added 3,700 new farms for a 15 percent increase, and Georgia gained 4,000 farms for a 9 percent increase.

Many states have posted smaller increases. And some states bucked much larger, negative trends. Last year, Massachusetts added a handful of farms for the first time since 1985, and Minnesota welcomed 1,000



Corn, wheat, and soybeans don't fit in small farm programs

new farms, that state's first up-tick since 1941.

The rise in numbers can be attributed to several factors, including wealthy new hobby farmers; retirees supplementing their income; people from traditional agricultural backgrounds who have returned to farming, usually part-time; and a growing alternative agriculture sec-

tor. Among this group are sustainable agriculturists, who seek self-sufficiency and to farm with as few off-farm inputs as possible (fertilizers, pesticides, purchased animal feed, etc.). These farmers want to minimize environmental harm and even to enhance the local ecosystem with their farming practices. There are more organic farmers now too, who seek to farm without pesticides or synthetic fertilizers.

What exactly are the pollination needs, if any, of these new farmers?

While some are cultivating exotic or unusual agricultural products with little need for honey bee pollination, such as Christmas trees or orchids, much of what is being produced can benefit from better pollination.

"Some of them are raising vegetables, some are raising cattle or hay. And some are what we would consider to be government payment only. You know, they have taken their land out of production by going into the CRP program (Conservation Reserve Program)," says Darryl Brinkman a statistician for the USDA. In order, the top five activities among those with less than \$10,000 revenue were cattle, hay,



Bigger is not better for alternative and organic farmers.

horses, government payments and fruit and vegetable growing.

"If they were approached right, some of these smaller-income farmers, part-timers and hobby farmers may be very receptive to beekeepers," says Steve Stevenson, acting director for The Center for Integrated Agricultural Studies at the University of Wisconsin. It's not a movement, though, that would be of much interest to large commercial beekeepers. "There are some types of agroecology values here that might come together well with small-scale beekeepers. For people who are interested in this, they don't want to see booms and pallets."

The value to beekeepers of some of the land uses reflected in the USDA figures may appear marginal at first glance. CRP land may provide quite valuable bee forage, depending on what is planted. The CRP program requires land to be reseeded annually, according to Sheryl Zavodny, USDA branch chief of conservation programs.

"The focus of our program is to preserve the soil and to provide cover that will benefit wildlife in the area," she says. Nectar and pollen-foraging insects benefit when legumes are planted, and landowners are paid a higher amount under the program's guidelines for seeding the land with legumes, Zavodny says.

Among people rearing livestock, those who are managing their land sustainably are converting cropland into long-term pastures and rehabilitating older pastures. Carol Ekarius, author of *Small-Scale Livestock Farming*, devotes a chapter to this process. She starts with her own story of how, after moving from the city in the 1980s, she turned cornfields into permanent pastures on the first farm she owned. The pre-

vious farmers had gone bankrupt rearing their animals in a "conventional" management system, mostly on silage. They planted all the fields to corn, year after year, the neighbors said. Ekarius succeeded in running a profitable pasture-fed livestock operation, she says, and later moved to a larger farm.

She encourages her readers to think of themselves as "grass farmers," and says legumes are a vital part of the mix. "The ideal forage for grazing is a mixture of true grasses and legumes," she says. In an appendix, she recommends a dozen legumes for livestock pastures. More than half are annuals that, if grazing is properly managed, will be allowed to flower and go to seed.

"I'm a really big fan of bird's-foot trefoil," Ekarius says. "Once it's established, it is a long-term plant that has a lot of benefit both environmentally and to the animals nutritionally. Once established in a pasture it's a stayer, it holds its own pretty well. And clovers, of course. The holding power of clover in a pasture will benefit if there's a good bee population in the area to keep the pollination up on it."

Small and part-time farmers may be able to manage their land much differently from the "conventional" model, which includes monoculturing commodity crops and large inputs of pesticides and other chemicals.

"For some of these people, farming is at best a real tertiary enterprise as far as the overall family income and a lot of it may be more hobby-like," Stevenson says. "They don't have to maximize their returns so they may actually take care of the land in an environmental sense as well, if not better than, some farmers that are really pushed to have

to beat hell out of that land for economic reasons."

Beekeepers needed

At Cornell University in New York, beekeeping researchers hear from both sides: people who want bees for small orchards and beekeepers who are looking to expand.

"This Spring, we heard the same story over and over again, which is that there are no bees to pollinate small stands of fruit trees where people have a few trees, or a half-acre of trees or a couple acres," says Peter Borst, an apiary technician at Cornell.

Dennis Van Engelsdorp teaches Cornell's Master Beekeeping program. He has seen the interest in small-scale pollination, too. "Especially in areas where *Varroa* has hit hard, like where I worked on Long Island, a lot of these people who may have a small personal orchard, or even a large orchard, are noticing that they are not getting pollination," he says.

Cornell's Master Beekeeping program was only recently established, yet it has already garnered 250 participants. Among those, "there are a lot of people interested in expanding," Van Engelsdorp says.

He gives an approximation of the interests of his students.

"A good 10 percent (of the students) are in the city, moving out to the country to keep bees on the weekends. About one-fifth are side-

Sustainable crops include small scale animal production.



Continued on Next Page

liners looking to make a substantial increase. They are full-time employed or retired, but looking at beekeeping as a real alternative. And then there is another 10 percent who are already in the country who are actively looking for more hives or apiaries," he says.

Small, part-time farmers tend to be do-it-yourselfers. They may take up beekeeping rather than pay for pollination. "A lot of hobbyists who have a hobby farm where they don't rely on its income heavily are beekeepers as well. It's just part of the animal life of the farm, along with the goats, the chickens, the cattle," Van Engelsdorp says.

Not in the numbers

Alternative agriculture is another strong trend among the new small farmers, many of whom may not be included in the figures.

Chris Upper is a professor of plant pathology at the University of Wisconsin who has cultivated a pick-your-own vegetable and berry farm since the early 1970s. He is also a long-time member of the Wisconsin Fresh Market Vegetable Growers' Association.

"This is not a group that is plugged into the conventional agricultural system. A subset of them is a group that shuns it," he says. "They don't come to extension meetings, and they don't belong to the conventional vegetable grower associations because they have their own groups."

The alternative grower's sense of discomfort with conventional agriculture and universities may be more than a persecution complex. Words used to describe people practicing alternative agriculture by some academics, government employees, journalists and conventional farmers that I spoke with in writing this story included "fruitcake fringe," "academics," "wannabes," "idealists" and "hippies." Small farmers were also disdained, and some of the terms above were used interchangeably to describe them. "Hobby farmer" is a derisive term to some. One person dismissed part-time farmers as "corporate executives in cowboy hats."

Some of these farmers may be alienated because they don't come

from farming backgrounds, or even have formal training. "Very few of them are formally trained in agriculture," says Upper. "I would guess that the portion that is trained in journalism or medicine is higher than that trained in agriculture."

Some of the prejudice may have to do with the bottom line. In Oregon, for example, 13.5 percent of the farms generated 88.5 percent of the reported farm revenue in 1999. Oregon gained 1,000 farms last year, mostly small. Phil Ward, the director of the state's department of agriculture, turned a blind eye to the growth in his 1999 annual state of agriculture statement. He gave a

Enhancing the local ecosystem.



gloomy report about the state's agricultural commodities sector and omitted mention of the growth among small farms.

"For the government and the universities, the organic marketplace doesn't fit their model. And as a result, they can't count it, they can't understand it, and they mostly deny it," says Mike Kane, who teaches a course in Binghamton, New York, called "The Small Farm Dream is Possible." "When something like this small-farm blip appears on the radar of their figures, they're really nonplused," he says. "They don't know what's going on."

Kane says the USDA and agricultural economists have trouble conceptualizing the consumer choices among these farms' customers.

"They can't understand why someone would pay a higher price for a local product that doesn't harm the environment," he says. "That makes no sense in their model if you can buy the same product from some smoke-belching factory in China that exploits the hell out of slave

labor, and sell the product for half the price."


What makes organic and other types of small farms viable is that most have chosen not to sell their produce as a commodity. Rather, they sell direct to the consumer.

"There's no industry, other than agriculture and some extractive industries, where the product is sold as a commodity anymore," Upper says. "If I'm in the business of making an automobile, I'm not making a generic automobile, I'm making a Ford, Honda, Mercedes. As I see people making it in agriculture, it's people who have found a way to free themselves from marketing commodities to marketing something of high value."

Author Carol Ekarius is a former board director of the Sustainable Farming Association of Minnesota and the Minnesota Institute for Sustainable Agriculture.

"You see an increase in these smaller farms where people say, 'Heck, I can make money. I just have to do this different.' In most of these state departments of ag, they're not saying, 'Hey here's a model. Maybe we should start promoting it.' They're looking and saying, 'Oh, that's just the nuts. The regular farmer is suffering.' Well of course - he's raising wheat. He's doing the same old, same old."

For beekeepers, small farms, both organic and conventional, may offer city or suburb dwellers a place to keep bees when no more hives will fit in the backyard. Such farms are often located close to large population centers where their goods can be sold direct to consumers. Often, they may be growing heirloom varieties that have unusual or better flavor but don't hold up well in modern shipping containers and can't be shipped in from longer distances for sale in supermarkets.

"These small farms are usually located in the urban fringe areas. By that I mean anywhere from 10 to 50, 60, sometimes 70 miles if the transportation routes are good enough and fast enough," says Stevenson, director of the Center for Sustainable Agriculture in Wisconsin. 

John A. Mitchell is a contributing editor to Bee Culture magazine. He is a radio producer and garden magazine writer living in Cambridge, Massachusetts.

Gift Basket Niche

Mary & Bill Weaver

Beekeepers Karen and Jim Gifford, of Dancing Bee Acres in Stanfield, Oregon, have found a rewarding marketing niche in selling gift baskets to corporate customers.

For last year's Christmas season, Karen made up several gift baskets containing their liquid, creamed and flavored honeys, along with honey straws and honey candy. She personally took the sample baskets to several local corporations. "We're members of the local chamber of commerce," she explained, "and that has given us valuable contacts.

"I talked first to the receptionist," she continued. "Generally the personnel director was also available. I left several sample baskets with them."

Karen was careful to keep her gift basket prices reasonable, using simple, inexpensive baskets, and some two-ounce "sampler" size jars of some of their honeys, in addition to some larger sizes. "All our gift baskets are priced under \$20," she said. "We try to keep the baskets affordable. Even so, corporations will generally buy this type of gift only for the higher-ups in the corporation."

Karen's sales trip with the sample baskets paid off handsomely. Several companies purchased gift baskets in quantity. One company, in fact, ordered 200 baskets. "Not all were for the local plant," said Karen. "Some baskets went to their plants in other parts of the country."

Gift baskets were also eagerly snapped up by customers in the Giffords' shop. "People were so excited to find something local they could send out as gifts," she explained. "That's what brought people to us. They wanted something local."

And baskets were not the only gift packs that sold well for the Giffords last Christmas. Other creative gift packs were also popular. "We made some small wooden crates," she said, "for gifts containing a queenline jar of honey along with a bear and an angel, all in different flavors."

A smaller wooden crate that was also popular contained three two-ounce hex jars of flavored honey. Both crates were made with a rope handle over the top, with the company name and logo woodburned into the end.

In pricing their gift baskets, at first the Giffords figured their labor at \$10 an hour. "Then we took a small business development course at our local community college," said Karen, "and we learned how to price our gifts more accurately. Now we figure our labor at \$20 an hour."

Karen purchases a number of honey-containing items for the baskets, including honey sticks from several sources, and honey gummi bears, honey mints and honey cremes and cordials from Honey Acres (1-800-558-



4-Pack of 4 oz. bottles with corks (Honey Acres). We fill these with four different flavors. We also use these as gifts for new businesses in town as a welcome gift. Working closely with the chamber of commerce. \$16.95 local (\$19.95 + shipping, if mailed or UPS).

Continued on Next Page



Two flavored bears, one bear candle, 20 honey stix and honey candy (\$19.95).

7745). Other honey candies are purchased from Betterbee (1-800-632-3379) and Glory Bee (1-800-456-7923). She also purchases small honey bear candles and honey dippers from Honey Acres. In figuring basket prices, Karen multiplies the wholesale cost of these items by two and a half.

"This pricing system assures us we can recover our advertising, shipping, stocking and general overhead for utilities, credit card fees, and so on," Karen commented.

However, although this pricing system works for the Giffords in their area, you'll want to do your homework on gift basket pricing in your area before setting prices. You'll need to price realistically in view of your area and your competition.

The Giffords' baskets and gift packs are shrink-wrapped with a commercial shrink-wrap machine from SHIP IT, Twinsburg, Ohio (1-800-481-3600).

"We tried adding small nickname type items to our gift packs," Karen continued, "but we soon found we were losing our focus. Our customers come to us for something local and unique (our honey is all sold raw and unprocessed), so now we use for our gift baskets only honey, honey products and candles. We also, on request, make up gift baskets containing personal care items using hive products as ingredients, such as shampoo, face cream and beeswax soap. We purchase these items from Beehive Botanicals."

For advertising for their honey shop and gift baskets, the Giffords rely on radio ads. "Advertising costs can really eat into your profits," Karen explained, "and we have found that the best way to get the word out to

One-pound jar and angel bottle (\$12.95)



the most people at the least cost is by radio."

For more information on the Giffords' operation and products, you can check their Web site, www.dancingbeeacres.com.

If you're thinking of trying your hand at making gift baskets, you'll be interested in some of the helpful ideas we gleaned from conversations with other (non-bee-keeper) gift basket makers around the country. Here is a baker's dozen of their tips:

1. Before you get started, check your state and local laws. In Florida, for example, a Florida gift basket maker told us, it's illegal to make gift baskets in your home, even if all the items going into the baskets are purchased prepackaged. In checking this out further, we found that in Florida, even if you rent space away from home to assemble your baskets, there are a lot of specific regulations you must comply with. So do your homework on applicable rules and regulations before making up any baskets.

2. Think big. There's a limit to how large an all-honey basket you'd want to put out. After all, how much honey can one household reasonably be expected to eat? But in the corporate world, there is a definite demand, several gift basket makers told us, for pricier corporate gift baskets, in the \$50 to \$100 range and up. A recent article in *Gift Basket Review* magazine (1-904-634-1902) highlighted this market in an article titled "Catering to the Corporate Elite."

If you can become a savvy shopper of gourmet foods, and can afford to have some money tied up in inventory, you can add gourmet cookies, coffees, etc., to your gift baskets to increase both your gross sales and your net profit.

3. Stay in touch throughout the year with corporations to whom you sell holiday baskets. Many corporations are interested in gift baskets for other occasions, such as retirements, customer appreciation gifts, etc. Your chamber of commerce may also buy gift baskets through the year as gifts for visiting dignitaries.

4. Try selling to apartment complexes. Many apartment managers purchase inexpensive gift baskets as a "welcome" gift for new tenants. You'll need to set up a regular schedule of calling for orders and delivering if you sell to this market.

5. Try selling to hospitals. Some hospitals may place big orders for gift baskets of local products for Nurses' Day (May 6), for example.

6. Try taking some gift baskets to sell at fairs and festivals. Have brochures and business cards available at your table.

7. Tourist shops that sell your honey may want to carry gift baskets of your products as well. As one gift basket maker told us, "Many tourists are looking for a gift for the neighbor that fed the dog or kept an eye on their house while they were away. They are happy to find inexpensive gift baskets of local products to purchase for these gifts."

8. Your best advertising comes from satisfied customers. Several gift basket makers told us they had built their business almost entirely by referrals from customers. Another type of advertising that has been a success for a number of operations is bus bench ads.

9. Don't get too greedy. Although you'll hear of gift basket makers who are making fantastic markups (*Gift*

Three flavored bears -
angel candle (19.95)



Basket Review magazine says 38 percent!), be sure to give your customers good value for their money. That's what will bring you repeat business.

10. In addition to the business card you attach to the outside of your wrapped gift basket (which is often discarded along with the wrappings), slip two others in

among the contents of the basket to remind the recipient where the basket came from.

11. If a gift basket is to be made up for a specific individual, ask the giver if the basket itself is to be merely the vehicle for holding the gift, or whether the individual will prize the basket as part of the gift. You don't want to put money in a fancy basket if the recipient is not likely to find it of value for further use.

12. The gift basket business is an enterprise you can get a start in with very little initial cash outlay.

13. Even if you don't get into the gift basket business yourself, gift basket companies can be good customers for your honey, bottled in two-ounce hex jars or small salt-and-pepper shaker mugs, for example. Many of the basket makers with whom we spoke said they would be delighted to have a source of local honey to use in their gift baskets. **EC**

Suppliers

Hubert Co. (1-800-543-7374)

Willow Specialties (1-800-724-7300) Both these companies have full-color catalogs with gorgeous lines of baskets, along with just about anything you could possibly need for making gift baskets.

Packaging Specialties (1-800-877-9911)

Mid-Con (1-800-547-1392)

Duval Container Co. (1-904-355-0711) These three companies have gift boxes and various packaging and mailing supplies.

Honey Bee Biology and Beekeeping



Dewey M. Caron

HONEY BEE BIOLOGY AND BEEKEEPING

The Best How-To, and Textbook of its kind. Perfect for classes, short courses and Master Beekeeper Training.

Order now for Fall, Winter and Spring classes.

X70

\$39.95

postpaid in the U.S.

To order send check, money order or credit card number to

The A. I. Root Company

623 W. Liberty St., Medina, OH 44256

800.289.7668, ext.3219

SHUTTING DOWN

James E. Tew

Season's end isn't beekeeping's end. There's still stuff to do.

For most of us, the Winter season is a dormant season as far as actual beehive manipulation is concerned. Much as we prepare our homes and automobiles for Winter, there are tasks that should be accomplished to help colonies pass the Winter. The common shutdown phases are:

- Preparing the yard for winter
- Final colony manipulations
- Processing the honey crop
- Cleaning up the record keeping for the year
- Exploring next year's changes

Preparing the Yard for Winter

Numerous articles¹ have been written describing how to initially set up the location; therefore, I am assuming that the yard is established and that much of the early work has been done.

Beeyard characteristics are all over the page as are Wintering climates. A good Winter yard in the South may very well be a terrible Winter yard in the North. However, in either location, trim back the grass – close. Eliminate brambles and undergrowth that is undesirable.

Get prepared for mud and snow. Level up those hive stands. No colony should be left sitting directly on the ground. For those of you in snow climates, do you have a place to push the snow? If you leave the yard snowed closed, do you have a way to get to the colonies in case they need help after a storm? Are the colonies positioned the way you want them? If not, this is a good time to get things changed around.

Final Colony Manipulations

Super manipulations. In the bright light of reality, there are no horribly incorrect Winter preparations – other than not leaving enough honey stores. Some beekeepers leave supers on all year while others remove them for Winter storage and maintenance. Though it is work to haul supers to and from the yard, I still recommend doing it. Empty supers stacked high on colonies are likely candidates for being blown off during Winter storms.

Hive maintenance. Autumn is a great time to put a fresh coat of latex paint on hive bodies. It's better to paint without the bees being inside, but it is okay to paint equipment while the colonies are on the stands. Early in the cool morning, before bees are freely flying,

is a good time to paint. As the day warms, the paint will dry rapidly. Painting is not required, but neatness counts – and the paint does help protect the equipment from rot.

Entrance reduction. Close the entrance down with something. Many styles of entrance reducers are available or you can improvise your own. Many bottom boards are reversible in order to allow a 3/4" opening during warm months and a 3/8" opening during cold months. Flip the bottomboard so the shallow side is up if you don't want to use other types of entrance reducers. Ironically, entrance reduction is performed in order to keep out mice – not coldness. It does no harm to put the reducers on as early as September. Mice are already searching for a place to call their Winter home by October. If you install reducers late, be sure you are not trapping mice inside the colony. During Winter months, once or twice per season, remove the entrance reducers and clear the dead bees from the bottomboard.

Arrange the bee cluster. Arrange your colony so the majority of the bees are in the bottom deep. If you Winter in one deep, ignore this step. Alternatively, there is nothing wrong with Wintering in three deeps, but position the cluster and the honey in the same positions (brood and bees in the bottom and honey on the top). Put the bee cluster in the middle of the bottom deep and place most of the honey in the top deep directly above the cluster. Brood production will be noticeably low at this time of the year. Combine weak colonies or queenless colonies with other colonies. Unless you have full frames of capped honey, it is probably too late in the year to feed colonies. Yes, beekeepers in warm cli-

A Northern yard in need of Winter preparation.



¹ Bonney, Dick. 1998. *You and the Landowners*. Bee Culture, February 1998.



This is a miserable yard to work – Winter or Summer.



A yard in southeast Alabama ready for Winter.

mates can still feed, but even for them late feeding is not the best management procedure.

The queen. If you have queen problems this late in the season, you have probably waited too late to address the problem even if you could still buy a queen. Combine queen-problem hives with other strong hives and divide again next Spring.

Reversing inner covers. As the Fall flow (if you get one) is waning, flip the inner cover over so the deep side is down. This gives the bees Winter cluster space on top of the frames. Many inner covers have a half-hole in the front in order to allow the escape of moisture-laden air. No matter what style of outer cover or inner cover, and no matter where you live, allow moisture to escape from the Wintering hive. Frost accumulates in hives in cold climates while moisture accumulates inside hives in warm Winter climates. Both situations are bad for Wintering colonies. About a 1/4" opening under the inner cover or migratory outer cover is usually enough to allow for air exchange.

Mite treatments. Unless you live in a warm climate, *Varroa* mite treatments should be finished and strips

removed at this time. Don't leave strips on during Winter months and never have strips on when honey supers are on the hive.

Culling frames. If you have frames you want to phase out, this is a good time to do it. They will probably be empty. It sounds bad, but you can actually leave the frames out until next Spring (one or two – three frames at most). Wintering bees will not miss one or two frames and can cluster very well in the empty spaces. However, it is important that these slots are filled before the flow begins next spring. Also, leave the empty slots at the sides of the brood chambers.

Insulating your hives. "Should I insulate my hives?" is a question commonly asked, but hive insulation is rarely ever needed – anywhere in the continental United States. Canadian beekeepers, in particularly cold climates, may see some profit from packing (insulating) but for most of us, insulating is unnecessary – even undesirable.

Honey stores. In preparing for the average Winter, a full deep of honey should be on top and at least a half-full deep should be in the bottom deep. The hive should be dead heavy when tipped from behind. Colonies Wintering from one cold season to another require slightly different quantities of honey. It's always your best guess.

Fumadil-B. Beekeepers who strive for perfect management procedures provide a Fall feeding of Fumadil-B to minimize nosema infections. Warm weather beekeepers have few (obvious) problems with nosema, while few northern beekeepers make the effort to feed the drug. Fumadil-B needs to be incorporated within Winter honey stores in order for bees to be fed on the antibiotic all Winter. Treated stores should have been eaten before the Spring season arrives.

Rock your hive. Put a rock or brick on the hive in case a gusty wind comes along during the Winter. The propolis seals are broken and the outer cover can come off easily. Though positioning the rock on the colony helps, it is not a necessity.

Miller² universal entrance reducers in place.



² M.J. Miller and Sons, 3595 TR 414, Dundee, Ohio 44624



An "X" mark indicating something significant to the beekeeper.

That's it for Winter preparation and yard shutdown. There are no guarantees, but any help you can offer the Wintering colony will be returned to you next Spring and Summer.

Processing the Honey Crop

Processing the crop can occur at any time of the year. Many beekeepers extract during Summer months and replace supers for a Fall flow. However, in general, Fall flows do not yield high-quality honey, and such honey is left for the bees as overwintering stores. During Autumn, as the nights cool, honey supers are mostly free of bees and can be easily removed from the colony. If you are particularly late, supers can even be removed during Winter months, but they must be warmed before extracting. Other than being terribly behind in your hive management schemes, there are few good reasons to leave supers on until Winter.

Record Keeping

I admit that it is truly difficult to keep written hive records. In the yard, bees are flying all about. Your hands are sticky – even gloved. So most beekeepers improvise records and notes on the fly. Various scratches, rocks and scribbled notes on the hives are immediate ways to keep hive records. However, most of us have only a short-term memory for such hieroglyphics. The Autumn shutdown season is a good time to finalize all these accumulated notes into written form. Record keeping is not done enough by beekeepers. Records become increasingly valuable as the years pass. You should keep some kind of written records – even minimally. Write on a calendar. Do something besides mark up your hive.

Through the season, stones and bricks can be used to indicate the condition of anything from the queen to honey stores or diseases. However, these are not permanent records and will mean little to you the next year and will mean nothing to anyone else.

Take the time to consolidate your hive records into written form. Written records will be helpful as your plan your next season.

Explore Next Year's Challenges

Unless you have been keeping bees for many years, each new season presents new adventures and chal-



The "brick" language of beekeeping.

lenges. As you end one year, begin immediately to plan for the next season. Order your packages for the next season. Consider using different types of equipment, different races of queens, producing comb honey, or prepare to use different mite treatment schemes. Your records will be invaluable in formulating your new direction. It's true. The bees do become very quiet as they patiently wait for the next Spring, but you should be beekeepingly active all year. The Winter months are the time that you regroup and prepare to have the next year be the best year ever. Finish the current year correctly and prepare to begin the next year correctly. ☐

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



We have the container you're looking for!!!!



Come visit us in Olathe Kansas,
1465 N. Winchester Olathe, KS 66061
Call for a free catalog:
1-800-547-1392

Check us out at
www.mid-conagri.com
or e-mail us at
mail@mid-conagri.com

**Many more styles available.
Please call for pricing
information or a catalog**

*We also carry a complete line of
beekeeping supplies, candle making
supplies, soap making supplies
& gift items*

BASKET CASE

Create a market, then create a basket. Here's how.

Ann Harman

Autumn is well under way in most parts of the country. Thoughts of harvest, pumpkins, Halloween and colorful Autumn leaves are in everyone's minds. So now I am going to interrupt those thoughts and say that now is the time to plan for Christmas. Actually, in some things we may indeed be a bit late with Christmas thoughts. I received a small catalog in July urging me to look over a selection of Christmas cards to pick my choice early. I must admit that the picture of a frosty landscape looked pretty good on a sweltering Summer day. However, the picture did nothing to inspire me with thoughts of a far-distant holiday season.

Really, this is the time to make your plans for gift baskets. These offer the beekeeper an excellent way to promote honey and wax products, in addition to making contacts for future sales and future years.

Gift baskets can be approached in two ways. First, you can find people who create gift baskets and sell your honey and other products to them. Second, you can create your own gift baskets and find those who wish to buy a finished basket. Each way has advantages and disadvantages. You will have to work out what is best for you.

Gift baskets are actually a large category. Businesses and corporations frequently use gift baskets at Christmas time to give clients or their own personnel a "thank you" for the year's cooperation. Individuals buy gift baskets for many occasions, not only for the holiday season. Gift baskets can say "welcome to the neighborhood," or "hope you will be feeling better soon," or "thank you for helping," or "congratulations on" Gift baskets can say "Happy Valentine's Day," or "Happy Birthday," or "Happy Anniversary." Gift baskets range from small and personal to huge and flamboyant.

Whatever the occasion and whatever the size, gift baskets need to be designed. A gift basket is definitely not a basket into which everything but the kitchen sink is tossed. Honey and wax products can be a major part or simply a small portion of the overall theme.

Let us first look at supplying honey and wax products to someone who creates gift baskets. Here it is necessary to begin by showing that person your various products: extracted honey, chunk honey, round sections, pairs of candles and wax ornaments. A wide assortment

of your products will enable the designer to choose certain products for certain purposes. Show the designer various sizes and styles of containers filled with honey, including a family of bears. Use some of the unusual jars such as the hex jar, the bail jar and the antique-style square jars with cork stoppers. Mid-Con, Brushy Mountain Bee Farm and B&B Honey catalogs have a nice assortment of interesting containers. The British and French equipment catalogs, such as Thorne and Thomas, have some really wonderful containers. Show off your different colors and flavors of honey. A pair of the little mugs one with light honey and one with dark, make a good way to show the designer what is available in honey colors.



Incidental touches can be used to enhance your product's appearance. Hangtags, such as those from the National Honey Board, look very professional and help "dress up" jars of honey. A wooden honey dipper tied on a jar with a piece of ribbon makes a nice presentation. Don't forget honey stix in different flavors. Although they might not be your own honey, the basket designer may wish to include some. Honey candies make good space fillers for baskets.

If you make candles, show the designer not only standard 10-inch tapers but also 6-inch tapers. Rolled candles in a few seasonal colors, as well as dipped candles can be included in your samples. Offering some

There's no rule that says everything has to be a product of the hive. Don't limit your opportunities, or your sales by thinking so.

other candle shapes, such as a pumpkin for Halloween and a Santa or tree for Christmas is a good idea. If you make colored candles, show some plain beeswax as well as colors. For ornaments, show both plain, unadorned ones and ones that you have painted or otherwise decorated.

You will want to show the designer your honey products with a well-designed label put on straight. Candles can have a small label saying "pure beeswax." However, don't be surprised if the designer says your label is all

Continued on Next Page

very well, but for a particular basket a special label will have to be used instead. Perhaps other items in the basket will have a company label, one that gives exposure to that particular company. Perhaps the required label needs to fit the theme of the basket, such as all items being "home-grown," products of a particular state. I saw an example of special labeling that illustrates one of these points. The jar of honey accompanied some pieces from a famous pewter manufacturer. The label was silver (pewter-colored), and a piece of the silver paper covered the lid and was secured with a thin silver ribbon. That jar along with the pewter items made a very spectacular showing. In case you are worried about having to create a supply of specialty labels, work with the designers, who may be having the desired labels made at their cost.

Don't be surprised – or disappointed – if the designer wants small jars, ones that may hold only eight ounces, or chooses 12-ounce bears over two-pound ones. Remember that gift baskets contain a number of different items, and they all have to fit in a certain space. If your name and address are on the label, and the recipient likes your honey, then you have created future sales of larger containers.

If you plan to create your own gift baskets for sale, you will also have to create the market for them. If you have



already made gift baskets, I hope that you have some nice photos of them. If not, then take some good photos of gift baskets that you can make. What makes a good photo of a gift basket? The basket should fill almost the entire photo. The background should be a neutral color and should be out-of-focus. Nothing looks more like a wrinkled bedsheet than a bedsheet used as

a backdrop. Take some time and put some effort into these photos because they are advertising for your product – a gift basket. The photos should look as good as the gift baskets do.

Who and where are the people who might buy your baskets? Look around your city or town and visit some of the businesses, large and small. Some of them may never have thought of giving a gift basket for a Christmas thank you. Visit with members of civic organizations and leaders of political parties. Some gift shops may wish to sell a few baskets seasonally. Is there a tourist center nearby? Small baskets may sell there very well, particularly if the basket contains items of local interest as well as your honey. Flip through your local Yellow Pages to find ideas that I have not even thought of.

Although we continually use the term "gift basket," does the container have to be a basket? No, indeed. In fact, a basket does not even have to have a handle. Cornucopia baskets come in different sizes, and although they do not hold very much, they make a very nice gift arrangement. Interesting wooden boxes, some with lids, some without, can be considered. A basket like tray, wooden bowl or picnic hamper lends a different touch. Seasonal arrangements can be made in plastic pumpkins for Halloween or colorful baskets for Easter. However, for ease in discussing these arrangements, the term "gift basket" will be used.

Craft shops carry an incredible assortment of baskets – tall, long, flat, with wire sides, with wooden handles or trim, painted, and who knows what else. Keep going back to craft shops. I find that their assortment varies throughout the year. You might have a basket maker in your community. If that is the case, it is possible to have custom-made shapes and interesting materials used.

While you are browsing in the craft shop, take a look at the different ribbons available throughout the seasons. The width of the ribbon should be in harmony with the size of the basket. A ribbon that is too narrow looks dinky and insignificant. The wire-edge ribbons work very well for gift baskets. Seasonal decorations can be used in conjunction with bows, but use restraint. One beautiful silk flower is enough with a ribbon and a bow. I have seen some attractive fake Autumn leaves. Choose those carefully. A clever Christmas tree ornament can be combined with a ribbon and a bow, but do not select one that is totally fragile. And do keep in mind that a non-beekeeping customer may not want to hang a bee on the Christmas tree.

A successful gift basket looks full. A tiny bit of the basket stuffing can peek through, but in general that basket should appear to be completely full of things. Here is where a sprinkling of honey candies can be tucked into gaps where they can lend color as well as substance. Adjust your size of honey jars to the size of your basket. Experiment with arrangement. If a one-pound Classic looks too big, then go to a smaller size or a differently shaped jar. Assemble the items for your basket, then start experimenting with the arrangement.

Some basket arrangements are one-sided, some are symmetrical. What is a one-sided basket? You can get a clue from the ribbon bow tied on one side only plus the overall appearance. A one-sided basket can be appreciated from only one side. The back side does not show off all the items. All you see are the backs of a few items. A symmetrical basket can be viewed from all angles with most of the items visible. Which is the best? Well, probably the symmetrical basket since it does not matter how it is picked up or handed to someone.

Do not think for one moment that all the items in a gift basket have to be products of the hive. Recipes, boxes of tea, mugs, towels, wine (not necessarily mead), cookies, honey pots, mixes for scones or biscuits, potholders, fruit of various kinds, jars of sauces, nuts, jars of nuts with honey, jams and jellies, cheese, stuffed toys, stationery, mustards, Summer sausage, local delicacies, candy canes, herbs, note cards, beer, dried fruits,

special vinegars, different coffees, kitchen gadgets, tea-cups, oh, use your imagination!

Creating gift baskets can be lots of fun. But you need to make sure you have tallied and calculated your costs. For everything. Even the amount of ribbon it takes to make a bow. Don't be afraid to spend money to make a truly unique and beautiful gift basket. Just keep track of it. Be willing to work with your customers, especially if they request a custom basket for a special occasion. Do your homework and be able to discuss what they can have for what cost.

Be ready this Christmas season to present some of your gift baskets to those special people on your gift list. Those who receive one of your baskets may well be your customers of tomorrow. ☐

Ann Harman is a sideline beekeeper and international marketing consultant.

Browning Cut Stock

1571 Hwy. 3 • Juliaetta, ID 83535

Ponderosa Pine Woodenware

Commercial boxes 9-5/8 - \$6.80

7-5/8 - \$5.50; 6-5/8 - \$4.15

Budget 9-5/8 - \$5.25

#1 Frames - 9-1/8 - \$.44

7-1/4, 6-1/4 & 5-3/8 - \$.42

Tops & bottoms P.O.R.

Phone (208) 276-3494 FAX 3491

HoneyOnLine

Producers of honey or honey related products are invited and welcomed to be included on our database. This database is an online resource for locating producers of honey, hive products and hive related services. You can now advertise your honey or related products for a **small yearly fee - online - with a live link to your own web site!**

Come check us out at www.honeyonline.com

You can sign up at www.honeyonline.com/producers

HoneyOnLine

10220 Bradigan Rd. Forestville, NY 14062

716.965.2904

TABER'S on the web . . .



RUSSIAN QUEENS & PACKAGES

Phone 707.449.0440

P.O. Box 1672

Vacaville, CA 95696

www.honeybeegenetics.com

Buy The Best

and eliminate the rest!

DAKOTA GUNNESS UNCAPPER

100 & 200 MODELS



We're Selling 42% and 55%

H.F. CORN SYRUP

From Minnesota Corn Processors

Call For Price Quotes

Call Toll Free 888.553.8393

FAX: 701.553.8394

E-mail: dakgunn@rrt.net

DAKOTA GUNNESS, INC.

P.O. Box 106 • Abercrombie, ND 58001



All of us Cats
just love these
Labels!

Purrrrrrrrrrrfectly

Great Labels!!

FREE STANDARD IMPRINTING!!!

For samples of our honey labels send \$2.00

R.M. FARMS

P.O. Box 684

Dearborn Heights, MI 48127-0684

Ph. (734) 722-7727 ~ Fax (734) 729-7826

Manufacturers of all types of Pressure Sensitive Labels



Bee Culture's Beeyard

The First Honey Crop From The BC Yard

In previous articles I commented that this year's nectar season looked great – flowers everywhere – but the honey crop was down by two-thirds in my area. I simply do not know why. It had to be the weather, but what aspect of the weather? I don't know.

I have regularly reported the ups and downs of preparing the BC hives for the 2000 crop year. There were traditional problems with diseases and pests (American foulbrood and mites), but I had remarkably few problems with swarming. Overall, I enjoyed the spring season in the yard and had good feelings about the future nectar flow. However, the flow never really materialized.

Beekeeping – It's just micro-livestock management

We are all actually honey bee farmers and like traditional farming, we have good years and ones that are not so good. The mindset of farming is that, "If I didn't get it this year, then there's next year." (Here I go

again)....on the positive side, I don't have tons of honey to process so the extracting procedure will be reasonably painless.

Robbing the bees

It has become politically incorrect to use the old term, "Robbing the bees" but rather we "remove surplus honey." I used my "pre-owned" (used) bee truck working with my "co-worker" (assistant) to get the honey to my "bee facility" (extracting room). To some people, robbing bees implied stealing from them, just as we steal milk, apples, and eggs, from other animals and plants.

My co-worker, Dave, always uses some type of Bee Go (butyric anhydride) product. The bouquet of this repellent is similar to that of human infant up-chuck and seems to have a half-life of several thousand years. Bees are repelled by the smell. I am repelled by the smell. Neighbors are repelled by the smell. However, it does a good job of driving bees from supers when used on warm days.

This safe chemical is sprinkled onto a fume board, a board that is nothing more than a shallow box rim with an absorbent pad.

A small amount of Bee-Go is sprayed onto the fabric. Start moving them down with a little smoke. If the bees don't move down, use more – to a point. Repellents are temperature-dependent. Cooler days will require more repellent. For odiferous reasons, don't get this chemical on you. Don't put Bee Go containers in your truck cab. Don't store it inside a building you care about and don't use more than you must. Also note that even when the repellent is working as well as it can, a few bees will still be left in the supers – especially if there is a patch of brood present.



A fume board (fabric side goes down).



Fume boards in place.



Step 1 - Remove the frames of filled combs from the super.



Step 2 - Using a hive tool, pry the frame halves apart.



Step 3 - Using a knife, cut the foundation to free individual sections.



Step 4 - Using the same knife; trim the foundation pieces from the section.



Step 5 - Making certain the notches align, slip covers onto both section sides.



Step 6 - Use adhesive labeling to hold the protective covers in place and to cover the foundation joint.



Step 7 - The entire work scene - including white plastic covers for imperfect combs.



Step 8 - The finished product - a round honey section.

Getting round sections produced by the bees is the hard part. Packing the honey is remarkably easy. Follow the next few steps.

White section covers are available for covering one side of an imperfect comb. Invariably, when the super is removed, some sections are not perfect. You eat these yourself, put them back on a colony next year, or cover the worst side with a white cap. Normally, such sections are lower priced than sections with two clear sides. Comb honey can be held in indefinite frozen storage to prevent crystallization.

As shown in the previous series of steps, Ross Rounds are easy to pack. No extracting equipment is required. Should you choose to produce this type of honey, be prepared to educate your customers on how to eat and use the product. Usually, the market for local comb honey is good.



A super being removed from a BC colony.

Depending on the daytime temperature, remove the supers when they appear to be as clear as they are going to be. Usually about 5-10 minutes is enough for the bees to move downward. The supers can then be removed from the colony. A bee brush in your hip pocket is invaluable in knocking off recalcitrant bees. A lighted smoker at the ready is necessary.

Several articles could be written at this point. Due to the weight of the super, some of you remove individual frames rather than moving an entire super at once. There are innumerable super stands, hand trucks, carts, or family members, that can be used to help remove and transport supers. However, for the sake of this discussion, in some way, get the supers off and moved to the car, truck, or honey house.

We use an old flat bed, 4-wheel drive, heavy-duty truck with a hydraulic lift gate - not exactly a hobby beekeeping vehicle. In this article series, I have always tried to use the same procedures and equipment as a hobby beekeeper would use, but at this point, I admit to you that I have strayed. I have used our bee truck and I used human help¹. Com-

¹ In my defense, it is nearly impossible to operate a camera and remove supers and Dave is younger than I so I used his back.



Supers on the bee truck. Note bottom and top covers.



Ross Rounds ready for removal.

mon sense requires that you use protective coverings in your vehicle. Honey will be leaking and stray bees will be all about. You will not be bored. Extracting and honey processing comes next, but that is a story for another time.

Producing in round sections.

You may recall I put on a couple of round-section supers on two beehives back in the spring, which the bees did an admirable job of completing. During the extracting super removal process, these supers were removed, too.

This time, I imposed on my brother, Dwight, for help in dealing with removing and processing this specialized honey product. (See box previous page.) Though not intended as an advertisement, producing comb honey in round sections seems to have more plusses than negatives. The supers are lighter in weight, but bees work them more reluctantly. Entire books have been written on ways to produce the specialty product, comb honey. The truth? All I did was put one super each on two strong colonies. **BC**

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

Specialty Beekeepers Keeping Specialty Beehives

Last summer, I had the opportunity to visit Bill Ringold's indoor apiary in Maryland. Bill and his father intensively manage three beehives in a dense residential area and have never had any complaints. The procedure of keeping the beehives in a converted car garage makes the Ringold's operation unique. For the most part, the three hives have glass sides for general viewing and are mounted approximately four feet from the ground on a stout platform. Several basic management procedures had to be rethought in order to keep beehives indoors permanently. For instance, the hives have no true outer covers. They don't need them. In fact, excessive moisture accumulates if they do have them. Instead, inner covers with numerous venting holes are used as outer covers. Hives can be supered in the dark, but artificial lighting is required if the queen needs to be found or if a disease inspection is required.

Since the entrances face the wall, a back bottom board entrance was improvised in order to clean the bottom board. The back entrances are visible in the photo. They are the unpainted strips with small hooks for handles. The Ringolds also learned that the hives needed large entrances that were located near the hive entrance. Bill reports that the hives have always wintered well and prosper within the bee garage.

In most years, Bill produces a good surplus honey crop and has never had complaints from neighbors. This is a clever indoor hobby bee operation and is an example of beekeepers' ingenuity and their ability to keep bees in unorthodox locations. See, you have no excuse for not keeping bees.



Two of Bill Ringold's three indoor beehives.

Bill Ringold standing near the outdoor entrances to his beehives.



Effective Newsletter Design

Mary Gannon

The final article in this series looks . . . at how your newsletter looks.

In this final installment of our series on producing a newsletter, we will discuss how your newsletter should look as opposed to what it should contain. Appearance is every bit as important as content – after all, our objective here is to get people to read the newsletter, and an attractive newsletter will ensure that your goal will be met. Such elements as page layout (format), type size and style, paper size and color, nameplate, masthead, headlines, photos, graphics and artwork can be combined in a way that will make it appealing to look at and easy to read.

The two major elements you will need to consider when preparing to launch your organization's first newsletter are *design* and *layout*. Design refers to the general, overall look of the document, and as a rule, its design will remain the same from one issue to the next. This consistency of design is important for two reasons: First, you want your newsletter to be recognized on sight by your readers; and second, you want your readers to be able to find the material they're looking for quickly. It's important to place the features (calendar, letters, etc.) that appear in every issue in the same place each time. However, you, as the editor, can feel free to change your newsletter's design from time to time as your organization evolves and perhaps as you yourself become more sophisticated with regard to publishing.

Other elements of design, such as type size and style, paper size and color, the number of columns on a page and the nameplate will distinguish your publication from all the rest.

Type size and style fall under the design element of your newsletter because they remain the same from one issue to the next to provide familiarity to the reader. It is standard practice to limit the number of type styles in your newsletter to three, even though there are so many available in today's desktop publishing packages. There is always the temptation to cram as many as possible into your newsletter just because you can, but that makes for a very messy document, confusing and difficult to read. Stick to one style for the text, a second style for the headlines and perhaps add a third, distinctive style for your nameplate. Captions can be smaller, italicized versions of the text style, and bold type can be used for emphasis. Choose a type style that is easy to read, and keep in mind the age of your readership when choosing the size of type used in the text. Nine-point type is acceptable, but 10- or 11-point type is more desirable, especially if your readership includes a large number of elderly persons.

Headlines should be at least three times the size of the body text and set in bold type, but they can certainly be larger if space permits. Also, use larger headlines to draw attention to the more important stories.

I'd like to include a word here about the content of your headlines. The headline is the "hook" that will draw the reader into the story. As such, it must convey the essence of the story in a very few words. Think of the headline as a mini-summary of the article and be sure that it conveys the main point without using the exact wording that appears in

the story. When writing headlines, remember to make them in the form of a sentence – subject, verb (can be implied) and object. Articles (a, an, the) can be left out. Also, headlines should be written as you would write a sentence – capital letters for the first word and any proper names and lowercase for everything else. This style is much easier to read.

The paper you choose for your newsletter will also distinguish it from all the rest. There are countless combinations of sizes and colors of papers out there, but it is wise to stick to standard-size (8 ½ x 11, 8 ½ x 14, 11 x 17) papers, as these are less expensive. Furthermore, I would suggest that you stick to 8 ½ x 11 or 11 x 17 papers as these sizes are more easily adaptable to desktop publishing packages and to copy machines than are other sizes. Layout and reproduction will be quicker and easier with standard-size papers.

It is also important to consider paper and ink colors. Readers find that white or very light-colored papers with black ink are easiest to read, but there are others that will work. Just be very careful when choosing these elements – avoid dark papers, neon papers and light-colored inks at all costs. They may look good, but they make the document difficult to read.

The next design item to consider is the actual page setup. By that I mean the number of columns on the page and exactly where the different regular features will appear – nameplate, masthead, calendar, etc. There are many options available, but probably the most versatile are the two- and three-column formats.

A single column on a page is too wide, and the reader may get lost trying to follow a single line across the entire page. Two or three columns break up the type and the resulting shorter lines are easier to follow. Either of these formats will allow for adequate white space on the page and will also offer greater flexibility in the page layout. It is fairly simple to create templates for the different pages of your newsletter using your desktop publishing software. You will need to create a separate template for each page that is different, e.g., a template with the nameplate and column layout for page one, a template for the masthead and column layout for page 2, a calendar template and a template for the address portion for your back page if you wish. Of course, if your newsletter has two or more pages with the same layout, you may use the same template for all of them. Refer to your user's manual for instructions on how to create templates, and remember not to change the basic template unless the change you make is going to be permanent.

You may wish to include a masthead in your newsletter. The masthead usually includes information such as names and addresses of the organization's officers, newsletter staff, the frequency of publication and how to submit items for consideration. The masthead is usually located at the bottom of the second page of the newsletter or in the space reserved for the address of the recipient on the back page. In addition to providing information often sought by members, the masthead also gives recognition to those whose volunteer efforts make the publication and the organization possible.

And last but by no means least in our discussion of newsletter design is the nameplate. This may just be the most critical element on the front page of your newsletter because it tells the reader that this is the official publication of your organization. It should also reflect the personality of the group

“Pull-out quotes are also a handy tool for expanding an article in addition to drawing the reader's interest to the story.”

and let the reader know that he or she is welcome here. If at all possible, get an artist to design your nameplate unless you or one of your members can create a piece of art that conveys what you want it to convey in a crisp, clear manner. The nameplate should contain the name of the newsletter, the name of your organization and the publication date. It can also contain a logo or graphic appropriate to your group. I would appeal to you not to use a honey bee or a hive, but what else is there? See if you can come up with a clever logo.

The second element of appearance is layout. Layout refers to the placement of material in each issue of the newsletter. As we stated before, the items you offer on a regular basis should appear in the same spot each time, but other stories should be positioned with consideration to their order of importance as well as to efficiency, i.e., how they will fit on the page. Just as in the newspaper, the front page of your newsletter should contain the most important information, with the lesser stories on the inner pages.

Placement of photographs, artwork, etc., are also elements of layout. These items can be used to highlight your story and also to fill space on a page when necessary, and they can add a great deal to both the appearance and the content of your newsletter. They can always be enlarged or reduced in size at will to fit your needs.

Taking good photos is an art, but with today's sophisticated yet easy-to-use cameras, an amateur can “point and shoot” great pictures by following a few basic tips. First of all, action shots and candid photos will tell your story far better than will posed photos. Second, when taking pictures, get as close to the subject as possible – the photo will be clear, and there will be less need for cropping the photo later. Also, avoid taking pictures of huge groups of people – the heads of your subjects should be no smaller than a dime in your picture so that the reader can recognize the faces. Always use photos appropriate for the story you're telling, and be sure to include a caption with the names, the place and the occasion pictured along with a credit to the photographer. As photographs are difficult to reproduce on a copy machine, it would be wise to have them made into halftones by a printer or at a photo shop. The cost is small compared with the difference in quality.

The use of other artwork in your newsletter can increase your readers' interest or turn them off completely, depending upon how you use it. It is a valuable tool when you need to fill a little space or when you wish to illustrate a point or a feature not accompanied by a photograph. There are innumerable resources eager to provide graphics, cartoons and other clip-art, but they must be used prudently. Too much makes your newsletter “cutesy” and give the impression that there's not much meat in the text. Too little makes for too much unbroken text, and the reader will become bored.

Layout could probably be termed a process rather than a thing because when you lay out your newsletter, many changes and adjustments need to be made in order for the material to fit into your design. Of course, it's impossible to expect

Can You Read This?

12 Point Serif

10 Point Serif

9 Point Serif

8 Point Serif

7 Point Serif

Way too small!

12 Point Sans Serif

10 Point Sans Serif

9 Point Sans Serif

8 Point Sans Serif

7 Point Sans Serif

way too small

Both the size and the style of type you use affects how easy, or difficult to read your newsletter will be.

you or your writers to produce the exact number of characters that will fit perfectly, so here are a few tools to make the material fit.

First of all, it's probably easiest to crop material that is too long. If the story is written in the inverted pyramid style discussed earlier, the stuff at the bottom can just be left off. You can also shorten text by deleting non-essential adverbs and adjectives, combining short paragraphs and rewriting sentences to make them more concise. Photographs, artwork and headlines can be reduced in size, and the type size can be reduced along with the spacing between the lines. Most desktop publishing packages also allow you to squeeze the letters on a line closer together (called tracking). But be careful when doing this - avoid making the spacing too tight as it

will be more difficult to read.

Filling in space can also be fairly simple using the following examples. Adding a photograph or piece of clip-art or enlarging those already there will fill up empty space as will adding extra space between paragraphs. Pull-out quotes are also a handy tool for expanding an article in addition to drawing the reader's interest to the story. A pull-out quote is a direct quote from the story, reproduced in larger type and set off by putting it in a box or by accenting it in some other way and inserting it into the middle of the story. Now is also a good time to dig into your files of unused but useful material for a piece of filler.

And so we conclude our series on how to produce an attractive, interesting newsletter for your beekeeping organization. Please do not consider these pages the last word in newsletter publication - there is

so much more information out there - perhaps another time. Nevertheless, we hope that you have found some useful information in these pages. ☐

Sources:

How to Publish a Near Perfect Church Newsletter, Robert W. Fisher, editor. North Canton, Ohio: Communication Resources, Inc. 1992.

Wynford Hicks, *Writing for Journalists*. London: Routledge. 1999.

Thomas S. Kane, *The Oxford Essential Guide to Writing*. New York: Oxford University Press. 1988.

Donald M. Murray, *Writing to Deadline*. Portsmouth, N.H.: Heinemann. 2000.


Mary Gannon is a professional copy editor, proofreader and Newsletter consultant living in Akron, OH.



PLANTATION BEE COMPANY

Queens, Package Bees & 5-Frame Nucs

P.O. Box 20371
St. Simons Island, GA 31522
(912) 634-1884



PIERCE ELECTRIC UNCAPPING KNIFE

Patented adjustable thermostat, blade now wound hotter at point end, guaranteed for one year.
(115 volt) 3-wire cord (220 volt) DEALER INQUIRIES INVITED

PIERCE MFG. CO. 2536 E. Fender Ave. Fullerton, CA 92831

HONEY BEAR LABELS

500 - \$38.00
1,000 - \$70.00
Add \$4.00 per 500 for Postage & Handling in the 48 states

Order Now and Save!!



FREE Imprinting But Space Is Limited

Other 2 & 3 Color Press-On Labels

Prices Subject to Change

CUSTOM LABELS

P.O. Box 861
Oconomowoc, WI 53066
Information Only: (262) 567-0392

MID-CON HONEY GIFT BOXES...

Nearly as perfect as the honey itself.

#01 Gift Box— Holds 3 items \$1.00 ea.	#01B Printed Carry Top Gift Box \$.80 ea.
#01A Gift Box Mailer, for box #01 (not pictured) \$.60 ea.	(golden honeycomb design, will hold 2 items)
#04 Natural Filler, 5 lbs. \$6.00	#01C Pure White Carry Top Gift Box (not pictured) \$.70 ea.

Shipping and handling extra, containers sold separately.



Mid-Con sells a full line of bee supplies, candle supplies and containers.

MID-CON

1465 North Winchester • Olathe, KS 66061-5881
Call toll free: 800-547-1392 • Fax: (913) 768-8968
Call for a free catalog • Visa and Mastercard accepted.

Richard Taylor



Bee Talk

"Thoughts of harvesting led me to reminisce, and this, from *The Joys of Beekeeping*, written long ago, still captures my heart."

Autumn has come, and I am deep into spinning out honey. These October days are incomparable to any others of the year. They seem laden with the sense of ending, and yet mingled in this is a heavenly beauty. They carry the sad feeling of bidding farewell to beloved friends, and yet one sees that this is but a phase in the eternal cycle. The period of fruiting is over, woods and fields are transformed, and what remains of my garden's harvest sprawls over the ground in the morning dampness. A few slugs take advantage of the sun's slow retreat. The occasional geese overhead, sometimes close, sometimes distantly honking, add to the sense of departure. But who can be blind to the sweetness of a quiet Fall day?

The flowers have dried up and offer nothing to the occasional visiting bee except, here and there, some late pollen. Nature's activity is coming to a halt, well ahead of the first frost, but the hives are heavy with the late Fall honey. They will Winter well this time, no doubt of it, and I need not worry on cold Winter nights that my bees will be hungry, as I sometimes do when a cruel early frost can rob some of my hives of their chief hope of survival. The bees now come and go, as always, but they are listless, their flight mostly pointless, the product of sheer habit, as the months until Spring stretch out before them.

Autumn always creeps up on me and then pounces, threatening to trap me with an early blanket of snow, before my honey is harvested. It has never caught me, but it sometimes comes close, and each year I am driven by anxiety that the first

snowfall will find me with extracting supers still on the hives. I am not sure that this would be a disaster or why it always seems so threatening. The honey could still be garnered even with snow on the ground. But everything would seem out of harmony, the mood would be wrong, and an activity that is normally filled with satisfaction would instead have the quality of an anxious dream. I always press, then, to have everything done before the first of November – the honey all spun out, the beeswax stacked in uniform yellow blocks and the honey house itself tidied up and the stickiness rinsed away. Then with the first snow and howling wind I can feel that another phase of my beekeeping year is completed, while a new one begins, and I feel in step with the cycles of nature.

A day for spinning out the honey begins as I pull myself from my warm bed in the chill early hours. Soon the sun begins to dye the eastern horizon red. Before long, it will drive the heavy fog from the lake and then dry the wet grass. A bit of tea helps stir me to life as I think of the stacks and stacks of supers filled with honey and waiting for me in the honey house. They have been kept warm through the night in my little heated super shed, so the honey will flow as nicely as on a hot Summer day. As dawn brightens, I contemplate, over breakfast, the thin column of smoke spiraling from my honey house chimney, rising from my potbelly stove that I kindled last night and ignited in the sleepiness of the early morning. The honey house will be toasty warm and smell of the apple wood cut from falling limbs of nearly ancient trees. Every

year at this time a few crickets find their way in. I do not know how. The structure seems secure against ants. But the crickets respond to the potbelly stove in about the same way I do, and they are certainly welcome to share it with me. Their bright notes are just the spice that is needed on these sometimes somber days.

The honey spinning continues until after supper and into the night, but my fatigue is compensated by tanks of precious honey. Besides this, a bed feels better to tired limbs than to a body that has done nothing, and not many thoughts can equal those that culminate a day of achievement. It is a lot of work, sometimes monotonous work, and I am sure there are people in other pursuits who, without working this hard, end their day far richer. But I would not relinquish my small honey house with its devices and old motors and gadgets, its simple machinery, its stove and its crickets. Once one has tasted the sublimity of nature, heard the hum of the bees, beheld the migrating geese, absorbed the song of the cricket and felt the intimations of the glory of God, one has no great temptation to try burnishing one's own greatness. The world and the hours, these are enough.

My honey house setup borders on the fantastic, at least to the eye of the layman, although it is all perfectly intelligible to me, since I designed it. Every element in it is intended to save time and work. It has evolved gradually over the years as new ideas and inventions have been incorporated, until now it seems nearly perfect. Perhaps it resembles nothing so much as a one-man band.

Continued on Next Page

The master of the apparatus stands at the center, operating various switches and motors with both hands and feet, and a great and orderly process revolves mysteriously around him.

Reconstructing the setup now in my imagination I find two gas burners for the generation of steam, which I must keep an eye on for proper adjustment, three motors salvaged from old refrigerators and laundry appliances, a great quantity of switches to activate motors and warmers, floats, a warning buzzer, various levers, paddles and some miscellaneous things for which it would be hard to find a name – these in addition, of course, to the usual spinner (or extractor), tanks, uncapper and so on. The instruments of my one-man band look something like this: Of course items are represented in this picture as strung out in a line. It would be quite out of the question to try representing them as they really are, for the whole complex apparatus is arranged more or less in a circle. I operate from the center of this circle where the many things needing my attention are within reach. Here is how it all works.

The supers are stacked, eight to a pile, on dollies that are rolled about where needed. I never need to lift a full super once it is in the honey house. The combs are loosened by prying up one end of the super and slipping a special stick underneath, thereby raising all the frames for easy grasping when the super is lowered onto the stick. A steam-heated knife is kept in rapid vibration by a motor that is turned on and off by a special switch at my toe. This slices the cappings off with a single motion for each side of the comb. The uncapped combs go one by one into the spinner and, when this is filled and running, they go into what I call the merry-go-round. This is a revolving rack of my design that holds the combs until the spinner is again empty and ready to receive them. The cappings, meanwhile, fall stickily onto a hopper and flow from there into my melter. This is an ingenious device that imparts no heat to the honey that accumulates in it but melts the cappings that float on this honey by means of

steam-filled copper grids on top. As the wax melts, it drizzles off into plastic buckets that serve as molds. Other than to change the plastic bucket from time to time, the melter requires no special attention once it is steamed up.

My honey spinner is made to hold 24 combs, but an additional 12 go in perfectly well. Even though some of the combs rest flat against each other, the honey all spins out as it should – a fact that, I have found, is little known among beekeepers. They can greatly increase the capacity of their radial extractors by taking advantage of it. The slots of the spinner are marked with a pattern of colored dots, which enables me to distribute the combs of each super throughout the radius of the reel and then restore them, after spinning, to the supers from which they came. This not only insures that the combs do not get mixed up but, more important, that the reel is always balanced and will not wobble. There is a system to this. Each super is emptied beginning at the center, and the combs dropped into the spinner according to the colored dots – red for the first super, yellow for the next one, and so on. Thus, even though the combs are of different size and hence of different weight, and even though some may be partly granulated, the spinner remains balanced.

Ideally, two people should work together at spinning. The nature of the work is perfectly suited to such cooperation: One can uncapp while the other loads, runs and unloads the spinner. I nevertheless prefer to do the whole thing by myself. I can start and stop everything according to my own mood and convenience. While the spinner is whirling away, driven by its old faithful motor and belt, I turn to whatever needs attention – adjusting the flame under the steam generators, checking the beeswax drizzle, scraping burr comb where it has accumulated or, of course, uncapping more combs and loading the merry-go-round.

The honey pours forth with a rush the moment the spinner attains speed, then continues to flow at a decreasing rate as the combs rapidly empty. It is conveyed by gravity to a baffled sump, which retains most of the particles of beeswax that have been spun out. As the

sump fills, it automatically raises a float activating the switch to my honey pump that is driven by the motor from a washing machine. The pump conveys the honey to an overhead tank, made by cutting an oil drum in two. This is the holding tank from which the honey flows at a constant rate into the warming pan beneath it. If the honey in this holding tank rises dangerously near the top, so that it might overflow, a buzzer sounds, activated by a float in the tank, and then I need only to turn off the pump for a few minutes.

The warming pan that receives the honey from the holding tank is a long water-jacketed pan interlaced with baffle plates. An immersion heater and thermostat keep the water in it at a constant temperature. A temperature of 130°F is usually sufficient to retard granulates for several weeks, but the device can be set above or below that as needed. The honey flows back and forth across this pan, guided by the baffles, then empties into a double-thickness nylon strainer consisting of two ladies' stockings, and then into the 100-gallon storage tank. The next morning it is drawn from the tank into whatever jars or tins I have arranged for.

Thus everything is incorporated into a smooth operation with a minimum of separate steps, from uncapping combs at one end to filling jars and tins at the other, the blocks of beeswax meanwhile accumulating as a byproduct and requiring no separate operation. The whole thing takes a bit of time to set up and get into proper adjustment, its various parts harmonizing with each other and the motions of the operator, but it is well worth it.

Honey spinning is long and tiring work, as I uncapp the combs one by one and start the honey through the system, and sometimes it seems endless. Yet it is the object of the whole enterprise and yields a sense of deep fulfillment when, at the very end, I uncapp the last comb and roll the last stack of supers into storage, concluding another season. ☐

Richard Taylor is a philosopher and lifelong beekeeper who lives in the Finger Lakes region of New York. He is the author of The Joys of Beekeeping.

?Do You Know? Answers

- True** Cucumber vines produce both female (pistillate) and male (staminate) flowers. Bees or other pollinators must move the dense, sticky pollen from the male flowers to female flowers in order to achieve pollination.
- True** Under normal colony conditions we would expect to find a ratio of 1 egg to 2 larvae to 4 pupae in the broodnest. These ratios are based on the life cycle of worker brood which requires 21 days from egg to adult. The egg stage requires 3 days, larval stage 6 days and pupal stage 12 days.
- False** Apitherapy is a term designating the use of bee products in medicine. While bee venom therapy has achieved the greatest use, honey, bee collected pollen, propolis, and royal jelly are all used for their medicinal value.
- True** Bee venom therapy is used to treat human allergic reactions to bee stings and as a relief from arthritis and human conditions such as multiple sclerosis. The success of these treatments are believed to be related to the venom injections enhancing the response of the immune system.
- True** Bumble bees, unlike honey bees, are native to North America.
- False** Congestion in the broodnest, not the honey supers is considered to be the primary cause of swarming. Swarming is a very complex behavior that is not fully understood. Many recognizable factors contribute to the impulse, but it is believed that swarm preparations are initiated by the crowded nurse bees in the broodnest.
- True** The Honeybee Act of 1922 was passed to prevent the importation of queens and accompanying worker bees from all foreign countries except Canada. Three important amendments to the Honeybee Act of 1922 were enacted in 1947, 1962 and 1976. The original law was passed to keep the United States free from the tracheal mite, *Acarapis woodi*. The 1947 amendment revoked a regulation which allowed importations by organizations and individuals other than the USDA for experimental or scientific purposes. The 1962 amendment expanded the import prohibition to all species of honey bees. The amendment passed in 1976 permitted the importation of honey bee semen only from countries free of undesirable species or subspecies as determined by the Secretary of Agriculture.
- False** Drones produced in worker-sized cells from eggs of laying workers are perfectly capable of producing viable sperm. These drones, however, are smaller in size and bee breeders try to eliminate the possibility of using them for instrumental insemination.
- True** Cannibalism by worker honey bees is one mechanism by which colonies control the number of drones produced. Even though normal colonies consume both worker and drone brood throughout the season, significantly more drone brood is eaten. As a result, drone production is often used as an indicator of the nutritional condition of a colony.
- True** Several goldenrod species are major nectar sources in late summer and fall in some parts of the country. The pollen is dense and sticky and is a good source of pollen for the bees as well.
- True** Queen cups are special cup-like precursors of queen cells. They are always present in a bee colony, though their numbers are greatest in the spring months. They are built at the lower margin of beeswax comb and in spaces where the comb is damaged or left open as a walkway to the opposite side of the comb. Sometimes they are built on a piece of burr comb extended outward from the comb face.
- D) Nitidulidae- Sap Beetles
- B) Asia
- B) Italy
- Tracheal Mites
Nosema Disease
- American Foulbrood
- American Foulbrood
- White Sugar, Water, Glucose or White Corn Syrup, Cream of Tartar, Honey (some recipes call for it but is not recommended because of potential disease transmission), and vinegar.
- Fall is an excellent time to treat for both tracheal and *Varroa* mites. Colonies are most affected by tracheal mites during winter confinement. Fall treatments help to suppress mite population development, thus reducing winter mortality. Female *Varroa* mites survive the winter by living on adult bees. Reproduction of *Varroa* mites is limited by the availability of brood. Treating in the fall when mite populations are high and when there is a limited amount of brood or none at all, increases the likelihood that the mites will contact the acaricide.
- Several situations can result in a colony being headed by a drone layer. If a virgin queen has not made a successful mating flight within three to four weeks after emergence, she usually becomes incapable of mating and becomes a drone layer. When the queen's supply of sperm in the spermatheca is depleted she also becomes a drone layer. In addition, there are numerous diseases and physiological problems that can prevent the queen from laying fertilized eggs. These problems are often divided into four categories: lack of fertilization, unsatisfactory fertilization, exhaustion of the sperm in old age and pathological drone-laying.

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 Pathology at Mississippi State University, Mississippi State, MS.

GLEANNINGS

OCTOBER, 2000 • ALL THE NEWS THAT FITS

NHB Adulteration Test BEET SUGAR FOUND

Commercial purchasers of natural honey may one day have a quick and easy test to assure that sugars from other sources do not adulterate the product, according to Penn State researchers.

"Adulteration with cheaper sugars brings down the natural value of the honey," says Dr. Joseph Irudayaraj, assistant professor of agricultural and biological engineering. "Consumers expect a natural product with nutraceutical properties, so added sugar does not supply good service to purchasers."

Those who wish to adulterate honey use beet sugar invert because it has a mixture of sugars – fructose, glucose and sucrose – similar to that found in honey. Beet sugar is less expensive and increases the volume of honey. However, because the sugar compositions are so similar, determining if foreign sugars are part of the composition is difficult.

"Current analysis uses carbon isotope ratios to determine if sugars were added to the honey," says Irudayaraj. "The analysis is time consuming and requires trained personnel."

The U.S. also imports honey from China and Argentina. According to Irudayaraj, standards vary between countries and a rapid test to determine the amount of adulteration could help meet U.S. standards.

Irudayaraj and Dr. Sivakesava Sakhamuri, a post doctoral associate in agricultural and biological engineering, were looking for a method that could be done in a few min-

utes by someone with minimal training. They chose spectroscopy, a method that uses the principle of interaction of light with matter to differentiate substances.

The researchers explained their preliminary study August 21 at the annual meeting of the American Chemical Society in Washington, DC. So far, they have tested one type of honey adulterated with various amounts of beet sugar invert.

"Using spectroscopy and statistical analysis, we can identify honey adulterated with as little as one percent beet sugar invert," says Irudayaraj. "Usually, anything above seven percent foreign sugar is considered adulterated, so this method works."

Honey is categorized by type – clover, orange blossom, wildflower – and by geographic region. A clover honey from Colorado and one from Florida, while both derived from clover, may have different chemical properties. The researchers are now working with Jack White, a recognized honey expert, and the National Honey Board, to test their method on a variety of honey types from diverse regions to develop a set of standards for this test method.

Although Sakhamuri and Irudayaraj have shown there is a spectrographic difference between natural honey sugars and the sugars in beet sugar invert, they do not yet know what those differences are.

"We now know that the test will show a difference, but we are not sure why," says Irudayaraj.

NHB HAS NEW OFFICERS

The National Honey Board elected Brent Barkman, Hillsboro, KS, as its new chair during the Board's annual meeting in Denver, CO. Gene Brandi, Los Banos, CA was elected as vice chair and Jill Clark, Lancaster, PA was re-elected as secretary/treasurer. Two additional Board mem-

bers, David Allibone, Sioux City, IA and David Hackenberg, Lewisburg, PA were elected to serve on the Board's Executive Committee.

The Executive Committee is responsible for the conduct of duties and policies outlined by the National Honey Board.

COUMAPHOS RESIDUE ALLOWED

The Environmental Protection Agency has agreed to establish tolerances for coumaphos in honey and beeswax.

The establishment of the tolerances will allow the sale of honey which has picked up minute amounts of coumaphos from the use of Bayer's Check-Mite+ strips, used to combat *Varroa* mites and small hive beetles. Also, it will be permissible to sell comb honey from hives treated with Check-Mite.

The tolerances are 0.1 ppm for honey (one tenth part per million; same as 100 parts per billion) for honey. Recognizing that the chemical concentrates in beeswax, EPA is setting that tolerance at 100 ppm.

The determination of the tolerances was approved by EPA an Aug. 2. Notification of the new tolerances was scheduled for publication on

the Federal Register during the following week. For the tolerances to be effective in a given state, that state's Section 18 permit for the use of Check-Mite must be amended by the EPA, a process which will take 7-10 days.

EPA established the tolerance for coumaphos, an organophosphate, despite its general refusal to add further food uses while assessing all organophosphates. Some other industries have been refused new food uses for OPs pending the overall review.

The need for the tolerance was brought to the attention of Bayer and EPA by Sioux Honey, which had found coumaphos residues in honey from hives treated with Check-Mite strips. Those residues were on the order of 10-15 parts per billion.

First Onboard SOUTH DAKOTA SUPPORTS ANTI-DUMPING

Gov. Bill Janklow said Friday he is contributing \$50,000 to help the American Honey Producers Association fight against unfair trade practices by Argentina and the People's Republic of China.

"If other nations are allowed to dump unfairly subsidized honey into the market, U.S. producers will be hard-pressed to survive. The pricing practices by Argentina and China have pushed the U.S. honey industry to the verge of bankruptcy," Janklow said.

"South Dakota and the U.S. agriculture industry cannot afford to lose our beekeeping industry, because the lack of pollination activities by our honey bees would result in lower production in all segments of the crop industry. This has the potential for broad effects on consumers and much of the U.S.

economy," he continued.

South Dakota producers have pledged to raise \$50,000 in addition to the \$50,000 from Janklow. The legal challenge is expected to cost about \$700,000, according to Richard Adee of Bruce, SD. He is president of the American Honey Producers Association.

"South Dakota is the first state to get on board. We are hoping Gov. Janklow's support will lead other top honey producing states to do the same," Adee said.

Adee said the association plans to file anti-dumping and countervailing duty petitions against the two countries under the U.S. trade laws.

Last year Janklow also gave state funds to help U.S. cattle and sheep producers in their legal fights over unfair foreign competition.

GM Foods

NOT POPULAR YET

Chances are they haven't even tried the stuff, but Americans are developing a distaste for genetically modified (gm) foods. Europeans are notoriously averse to importing American-grown gm foods. Now, Americans show signs of importing the European aversion. A new Harris poll makes the point that Americans' relative indifference to the controversy does not prevent them from holding negative opinions. So far, just 15 percent of Americans have read, seen or heard "a lot" about gm foods. Nonetheless, 45 percent were ready to assert it's "very" or "somewhat" likely that foods made from genetically engineered crops "will be poisonous or cause disease in people who eat

them." Likewise, 56 percent said it's "very" or "somewhat" likely the growth of such foodstuffs will "upset the balance of nature." Under the circumstances, it's no surprise 86 percent of respondents believe the government should "require labeling of all packaged and other food products stating that they include corn, soy or other products which have come from genetically modified crops." To the extent the survey holds glad tidings for would-be marketers of such foods, it's in the finding that 38 percent of respondents believe the "benefits outweigh the risks." Still, 48 percent feel the "risks outweigh the benefits."

From *Adweek*

OBITUARIES

Herschel D. Womac died August 15, 2000. He was 78. H.D. was born in George West, Texas on July 8, 1922. He served as the president of the Houston Beekeepers Association for several terms throughout his 24 years in the honey business. He was considered by many as an expert on honey bees. One of his many honors was the Best of Show in the American Beekeepers Federation Convention earlier this year in Fort Worth.

W. W. (Bill) Clark 83, died August 29, 2000. Bill attended the schools of Latrobe, and later Penn State, and graduated with a degree in agricultural education as a member of the Class of 1939. It was during his years at Penn State that he met Bess Treager. They were married Nov. 23, 1941 and together they raised a daughter and a son. During WWII Bill served with the 20th Corp, Third Army in the European Theater.

After the war Bill worked with Penn State Extension Service as a beekeeping specialist, retiring in 1974 after three decades of service. Bill and Bess relocated to Canton, PA, where, along with their son, they operated an active beekeeping business. During this time Bess was a

regular contributor to *Gleanings In Bee Culture*.

But Bill was not yet ready for the rocking chair. Still vigorous, still young at heart, ever the educator, Bill embarked on a series of overseas adventures as part of the Volunteers in Overseas Cooperative Assistance, to help beekeepers in developing nations such as Bolivia, Gambia, Costa Rica, Egypt, Tunisia, Indonesia and Slovakia. His beloved Bess traveled with him, serving as photographer.

He served three terms as a member of Canton's Borough Council, was a member for several years of the borough Water Authority, and most recently was chairman of the Canton Shade Tree Commission. He was a past master of Canton Lodge No. 415, F&AM, and a member of the PA Beekeepers Association. Along with Bess, Bill was instrumental in establishing the Apple and Cheese Festival, initiating the apple butter demonstration, which has become a popular highlight of the festival each year.

Bill is survived by his wife of nearly 60 years, Bess; daughter, Jane; son, Jeffrey; brother Herbert; sisters Ruth Emerson and Janet Clarke.

WHO'S ON FIRST?

A survey of "average investors" by New York-based Doremus Advertising found many have mistaken ideas of what some Fortune 500 companies do. For instance, the 10 percent who knew Halliburton is an energy outfit barely outnumbered the nine percent who thought it was in the "fish industry." While 20 percent knew Praxair

deals in industrial gasses, 50 percent said it was an airline. (With brand equity like that, maybe Praxair should start an airline.) Sixty percent knew Caterpillar makes construction and farm equipment, but 10 percent thought it was a pet company. Makes you wonder what sort of pets those people have.

From *Adweek*

AAPA AWARDS

AAPA STUDENT RESEARCH SCHOLARSHIP is given to recognize and promote outstanding research by students in the field of apiculture. The scholarship will consist of a \$1000 stipend for research.

Undergraduates or graduate students working in North America with Apis are eligible. Nominees must be students of active AAPA members to be eligible for this scholarship. Recipients of this scholarship will be ineligible for future AAPA Student Research Scholarships.

STUDENT PAPER AWARD This award is offered for the best student paper presented at the American Bee Research Conference (ABRC). The year 2001 conference

will be held in San Diego, CA, in conjunction with the American Beekeeping Federation convention, January 12-15, 2001. The recipient will receive \$50 and a plaque to commemorate the occasion.

Titles for the papers must be submitted (postmarked) by November 3, 2000, to Dr. Jeff Pettis: JPettis@asrr.ars.usda.gov, or mailed to him at Building 476, BARC-East, Beltsville, MD 20705. The presenter should specify that he/she is a student participating in the competition when the title is submitted. Only one paper may be designated as participating in the competition.

For more information on the AAPA Awards contact Ann W. Harman, 1214 North Poes Road, Flint Hill, VA 22627

Bees By the Sea – EAS 2001

Next summer, Aug. 6-11, will you be at the MA Maritime Academy, Cape Cod for a terrific EAS Annual Conference & Short Course? We're planning an exciting multi-level Short Course, awesome main symposium, fun & informative workshops, tours & excursions, a competitive honey show, more vendors than ever before, a tasty banquet, and a "Surf or Turf" barbeque. Doesn't that sound like fun?

We hope you'll join us & if you prefer hotel accommodations or a campground, you'll make your reservations soon. Cape Cod is a busy vacation destination, and while some facilities begin accepting reservations on March 1, many are full by January. Contact information for the Cape Cod Chamber of Commerce is on the EAS 2001 website, as well as information on facilities close to MA. Maritime.

Visit our website at: www.capecod.com/bcbs/eas2001.html or Jay Barthelmeus, 7 McElway Dr., Harwich, MA 02645; 508.430.2740 (eve. before 9PM)



**Comb Honey
Has Come
Full Circle**

Use round comb section equipment by Ross Rounds, Inc. and see how this low cost investment can increase your profits.

Contact your dealer for supplies.

**ROSS
ROUNDS™**
Ross Rounds, Inc.

PO Box 582, Guilderland, NY 12084 • V 518-370-4989 • F 518-381-6370 • www.rossrounds.com

**SEND YOUR MEETING NOTICES
AT LEAST 2 MONTHS IN
ADVANCE AND WE WILL PRINT
THEM FOR YOU**

educational efforts, honey purity and legislative action. Send for a membership packet of information today! Contact the American Beekeeping Federation, P.O. Box 1038, Jesup, GA 31598, ph. (912) 427-4233, fax (912) 427-8447 or email <info@abfnet.org>.

IRISH BEEKEEPING. Read An Bheacaire (The Irish Beekeeper) Published monthly. Subscription \$18.00/year, post free. Mr. Graham Hall, "Weston", 38 Elton Pk., Sandycove, Co. Dublin, Eire, email: Graham Hall@dti.team400.ie.

THE AUSTRALASIAN BEEKEEPER. Published monthly by Pender Beekeeping Supplies Pty. Ltd. Send request to: The Australasian Beekeeper, PMB 19, Maitland NSW 2320, Australia. Sub. \$US 27.00 per annum, Surface Mail (in advance). Payment by Bank Draft. Sample free on request.

BRITISH BEE JOURNAL. Monthly single copies 33p plus postage. \$15.00/yr. U.S. Annual subscription post paid. Sub-agent: 46 Queen St., Geddington, NR Kettering, Northants, NN14 1AZ, England.

Be interested. For beekeeping information read the AMER. BEE JOUR. New editorial emphasis on practical down-to-earth material, including question & answer section. For information or free copy, write to: AMERICAN BEE JOUR., Hamilton, IL 62341.

THE AUSTRALIAN BEE JOUR. Monthly, SeaMail \$35 (Aus.), AirMail \$50 (Aus.). Write to: Victorian Apiarists' Association Inc., Eileen McDonald, R.S.D. McKenzies Hill, Castlemaine, Victoria, 3450 Aus. Sample on request.

THE NEW ZEALAND BEEKEEPER. National Beekeeper's Association of NZ. Write for rates & indicate whether airmail or surface. NZ BEEKEEPER, Box 3079, Napier, NZ.

SOUTH AFRICAN BEE JOURNAL. The official organization of the S.A. Federation of Bee-Farmers' Associations. Sample copies only available on receipt of a donation. P.O. Box 41 Modderfontein, 1645, South Africa.

BOTTOM ... Cont. From Pg. 64

August brought more of the same: hot and dry. But still there was a small but steady honey flow from the alfalfa. And by month's end, another super was almost full.

September continued hot, with temperatures still above average. Because of the hot weather, some farmers left their alfalfa a few days longer before cutting, and I even got a bit of honey in September. Not a great deal, but the sweeter for being unexpected.

No doubt the above-average temperatures during the Summer had a lot to do with my honey being so thick. But I'm not about to complain. It was some of the best honey I've ever gotten. And I got more of it than I ever expected to, in a location that has become, due to changing farming practices and an oversupply of bees, rather marginal.

So, all in all, it was a pretty good season. And now, with September come and gone and the extracting all done and the mouse guards in place, that active part of the bee year is over for another year. Now, with gray skies and snow on the mountains, the inactive season has begun. Speaking as a beekeeper, it's not my favorite season. It's nice to have everything, all the bee jobs, done for a while. But I miss being with the bees. So I keep in touch with them the best I can, by reading what others have written about them, by comparing notes with other beekeepers, when the opportunity arises, and most of all, by dreaming about and making plans for the next season of activity with the bees. After all, for a beekeeper, making bee plans is always in season, any season of the year.

Reader Assistance

To subscribe to *Bee Culture* remove or copy the form below, fill it in and return it and your remittance to the address at the bottom. Please allow 3-5 weeks for your first copy to arrive. And Thank You!

Please Renew New Subscription
 Sample

2 Years (24 iss.) - \$38

1 Year (12 iss.) - \$20

1 Year (Foreign) - \$30

2 Years (Foreign) - \$58

Airmail on Foreign Subscriptions Available on Request. Find my enclosed check, or charge to my Credit Card. Call for information on back-dated subscriptions.

Name _____
Address _____
City _____
State _____ Zip _____
Phone # _____
Please check one
 Visa MasterCard Discover
Card # _____
Exp. Date _____

ADDRESS CHANGE

If you are moving, please fill in the form below so we can process the change without delay. Also, if you have 2 addresses during the year (i.e., winters in FL and summers in CT), let us know which months you spend where and we can pre-program your address change so you won't miss any issues.

FOR PERMANENT CHANGE:

Name: _____
Old Address: Street _____
City _____ State _____ Zip _____
New Address: Street _____
City _____ State _____ Zip _____

FOR TEMPORARY CHANGE:

Name: _____
Address No. 1: Street _____
City _____ State _____ Zip _____
Circle Appropriate Months: J F M A M
J J A S O N D
Address No. 2: Street _____
City _____ State _____ Zip _____
Circle Appropriate Months: J F M A M
J J A S O N D

Send to: The A.I. Root Co., 623 W. Liberty St., Medina, OH 44256
Available on microfilm from: University Microfilms, Inc., 300 N. Zeeb Rd., Ann Arbor, MI 48103

HONEYSTIX

Kids of all ages love them!
Twenty flavors available.

Available at:
Endless Mountains Apiaries
RR2 Box 171A
New Milford PA 18834
Ph. 570-465-3232
Email bee@epix.net

Gray Caucasian Bees & Queens
Al Norton Apiaries
304 Coldwater Creek Rd. • Taft, TN 38488
(931) 425-6890

HACKLER HONEY PUNCH



UNCAPPING TIME? Why cut and scratch?
JUST PUNCH! This hand held roller device is a revolutionary new approach to uncapping honey. Available in five sizes; 2" - \$25, 4-1/4" - \$35, 5-1/8" - \$40, 6" - \$45, 8" - \$50, plus \$5.00 shipping fee per unit. DEALER DISCOUNTS AVAILABLE.
PLASTOOLS, Dept. A, 4450 "Y" Rd. Bellingham, WA 98226 • 360.592.3108 • plastools@earthlink.net



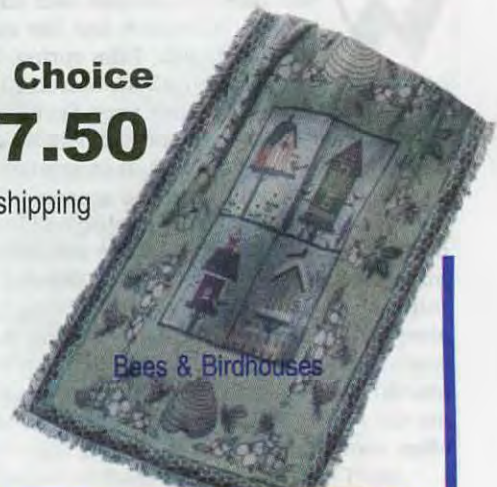
Black-eyed Susans



Busy Bee with Skep

Your Choice
\$37.50

+ shipping



Bees & Birdhouses

Honey Bee Afghans For Holiday Giving

Beautiful, heavyweight, 100% cotton, 46" x 67", fringed
 Black-eyed Susans bordered in honey bees – gold, black and dark green
 Busy Bee with skep and verse in border – rose, blue, gold and natural
 Honey bees & birdhouses – Hunter green, black, gold and natural

ITALIAN QUEENS SUMMER PRICES

1-9 – \$8.25 • 10-24 – \$6.75
 25-up – \$6.50

Prices include postage and Apistan Queen Tab
 Clipping or marking . . . \$1.00 each.
 RUSSIAN or ARS-Y-1 CARNIOLAN HYBRID
 QUEENS!
 ADD \$3.00 per queen to these prices.

With Credit Card
 Call Toll-Free
 1-800-233-2899

WALTER T. KELLEY CO., INC.

3107 ELIZABETHTOWN RD. • P.O. Box 240 • Clarkson, KY 42726-0240
 Ph. (270) 242-2012 • FAX (270) 242-4801



Display Advertisers

Bees & Queens

Glenn Apiaries	23
Hardeman Apiaries	42
Harrell & Sons	28
Hawaiian Queen	60
Homan-McMasters	28
Koehnen, C.F. & Sons	38
Miksa Honey Farm	60
Morris Family Apiaries	28
Norton, Al	62
Pendell Apiaries	38
Plantation Bee Co.	52
Rossmann Apiaries	38
Shuman's Apiaries	38
Strachan Apiaries	18
Taber's	45
Wilbanks Apiaries	21
York Bee Co.	Inside Back

Education

American Honey Producers	31
IBRA	56

Equipment

Apiary Forklift	14
Backsaver	15
CC Pollen	31
Cowen Mfg.	16
Dakota Gunness	45
Pierce Uncapping	52
Pierco Frames	19
Plastools	62

Related Items

Bee Services Beescan	38
Custom Labels	52
Endless Mtns. Honeystix	62
Honey Acres	38
HoneyOnLine	45
Howalt-McDowell Ins.	42
Observation Hive	60
Pourette	23
R. M. Farms	42
Small Farm Trade Show	16
Stoller's Frame Spacers	42
St. Simons Trading Co.	60
Tuttle Apiary Lab	23

Suppliers

Bayer Strips	1
B&B Honey Farm	9,23
BetterBee	16
Browning Cut Stock	45
Dadant	13
Gamber Container .. Inside Front	
Golden Jugs	23
Honey Bee Container	3
Kelley, Walter	55
Mann Lake Supply	19
Maxant Industries	16
Mid-Con	41,52
Perma-Comb Systems	31
Precision Plastics	42
A.I. Root	37,42
Ross Rounds	42,59
Rossmann Apiaries	38
Ruhl Bee Supply	9
Sailor Plastics	Inside Back
Sherriff, B.J.	14
Simpson's	21
Wellmark	Back Cover

When does one season end and another begin? The calendar tells us, of course, but the calendar is at best often a rough approximation. Take spring, for instance. The calendar says Spring begins on March 20 (or March 21, depending on your calendar). Yet seldom is the weather very Springlike here in Utah in March. At least for more than a day or two. Fall tends to be the same way. The first day of calendar Autumn often seems much more like Summer.

So it tends to be with the seasons of the bees. How do we tell when one season ends and the next begins? I suspect every beekeeper has his or her own notions on this. The weather plays a big part in such determinations. When the ground is covered with snow, it's pretty hard to think of the bees as being in anything but their Winter season. And I always think of bee Spring as having definitely arrived when my bees begin bringing in the first pollen – willow pollen – in the middle of March. The appearance of the first sprightly dandelions just convinces me the more that Spring has come to stay. This despite the fact that it often snows in my area as late as May.

And I think of bee Summer as beginning when the first alfalfa puts forth its regal purple blossoms, even if the weather still seems unsummerlike. I count Fall as having come when the rabbitbrush starts to bloom – usually in mid-September. By that time, in this area, all the honey flows are over, except in the rare year when the rabbitbrush produces a surplus.

But I have another way of thinking about the seasons of my bees. What might be called the active and inactive seasons. Or the season when the bees are flying (roughly calendar Spring, Summer and Autumn) vs. the season when they are not (roughly calendar Winter). And this leads to another of my notions of bee seasons: the season when I am working with the bees (roughly April through September) as opposed to the season when I'm not (roughly October through March).

There are, of course, smaller seasons within the working-with-the-bees season. There is making-splits season (late April). Swarming season (late May into June). Putting-supers-on season (no later than the middle of April). Major-honey-flow season (June and July). Minor-honey flow season (August into early September). And there is, of course, extracting season, which for me sometimes begins as early as June or as late as September, depending on such variables as amount of honey coming in, spare supers and the demands of the non-beekeeping world.

This year I didn't start extracting until early in September. There are advantages in waiting till September. For one thing, I can do all my extracting at once, over the course of a number of days. For another, the honey I get has been thoroughly ripened by the bees. Such well-ripened honey is thick and luscious. Pure pleasure to the palate. In fact my honey was so thick it was rather difficult to uncap and spin out. But the end result was well worth the effort. Customers love thick, well-ripened honey, and they'll come back for more.

But back to bee seasons. When does the bee season end? Again, I suspect that different beekeepers have different notions on this topic. For me the season seems to have ended when I put the mouse guards on my hives. I usually do this around the end of September, after the extracting is done. It's the last task before Winter, so it has for me a certain symbolic quality. It's sort of like saying goodbye to the bees until the coming Spring. I do like to check my apiary a time or two in the Winter, but by that time the hives are covered with snow, and of course I don't disturb them.

So what about this last active bee season. At least for me it began rather favorably with nice warm weather in the latter part of March and the early part of April. But just when the dandelions were coming on in full force, the weather turned rainy and cold, and my bees were confined to their hives. Then, just when the apple trees stood pink with

blossoms, along came a frost and froze them all. But my hives still had plenty of surplus honey from the previous season, so I wasn't worried about them, just disappointed that the bees hadn't had more of a chance to gather needed Spring pollen.

May was rather gray and gloomy, with a good day now and then. There were still dandelions here and there, though another frost late in May "tipped" whole fields of yet-to-bloom alfalfa. Such partially frozen alfalfa may or may not recover enough to blossom, depending on the severity of the damage. I was beginning to expect a rather bleak honey crop. But at least my supers were on. (Remember that bit of beekeeping wisdom: "Super thy hives early.")

The first day of June brought a snowstorm. A snowstorm! There's an old saying in these parts that it can snow in any month but July, unless it wants to snow then, too. That old saying did little to relieve my disappointment. June remained cool and inhospitable until the last 10 days of the month, when Summer finally came, bringing record-breaking heat. Well, at least it was finally bee weather.

When I first ventured a look into a super or two, I expected to find little or no honey. But, I consoled myself, I still had July in reserve. I was bound to get some honey in July. The first super was nearly full, the frames bulging and white with new wax and honey. The second I checked was the same. As were most of the rest. Time to add more supers.

July turned out to be hot and dry. Hotter than usual. But my bees were obviously keeping busy. The month brought no monster honey flow, but rather a smaller, sustained flow. By the end of the month, most of my hives needed another super.

Seasons

Richard Dalby

BOTTOM BOARD