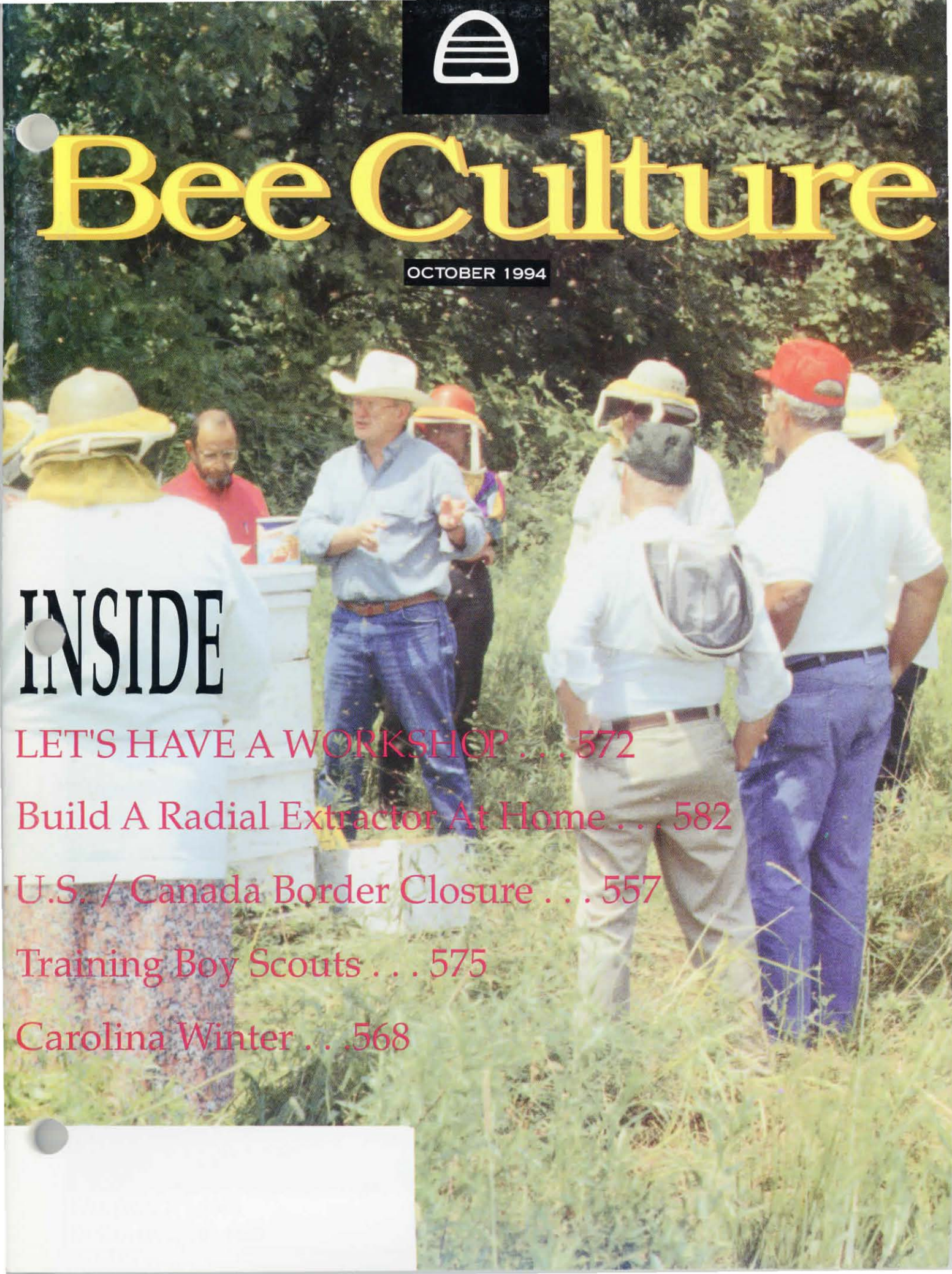

# Bee Culture

OCTOBER 1994

## INSIDE

# Octo



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*Publisher*

KIM FLOTTUM
*Editor*


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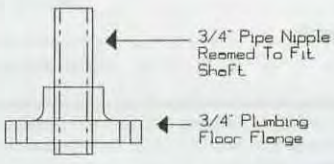
*Tracheal Mite, Pg. 555*

## FEATURES






*Radial Extractor, Pg. 582*



### Cover
Workshops are always popular at meetings. On our cover Dr. James E. Tew leads an Ohio State Beekeepers workshop. But outside, or inside, planning and more planning are needed.

# INNER COVER

# Strong Associations

Over the years we have discussed dozens of ways to strengthen associations. A few years back Jim Tew had a series on how to plan for and conduct a workshop session. It focused on the planning stages, administrative responsibilities and the mechanics of things like tables and chairs, light switches and locked doors.

Not too long ago Dick Bonney did a similar overview, focusing on the calendar of events preceding a meeting so it all came together on time at the right place. This month Dick again looks at meetings, relating several suggestions for holding a day in the beeyard.

I've talked several times on what makes an association click, or, at least my opinion of that subject. I've drawn from several groups that have appeared strong, growing and dynamic, and shamelessly revealed their most intimate secrets.

No doubt there are many things that contribute to a strong organization. Leadership is primary. Without a strong head (a single person or a board) a group will continue, but not well and not for long. Think of that butchered chicken you've heard about. Remove the head and the body flops and hops and hops and flops, but doesn't really get anywhere, and after awhile it's pretty much dead.

Communication, too, is vital. Everybody needs to at least know what's going on. They can choose to react or not, but they at least need the choice. How many meetings have you attended that you didn't know were being held? I've said before that maybe this is *the* most important function of a group and a good newsletter certainly facilitates that.

But this discussion always, it seems, comes back to meetings. And the most frequently asked question is (are you ready for this?) "How do you *maintain* interesting meetings?"

And, since this is the season of mostly indoor meetings I thought I'd pass along some of the good ideas I've seen over the years that seem to work for groups.

But first, let's talk a little about money. You can have absolutely great meetings drawing on your internal resources. Almost every group has two or three experienced members who can share what they've learned over the years. They can, in fact, be the core of many demonstrations. But it's work putting on a demo. You've got to prepare, haul the stuff in, do the work, pack it up and put it away. Like I said – work. But, you can only go to the well so many times. Especially if they don't get much help, and especially if they're not paid. Not many people work for free, or at least not for long. Yes, there are some saints out there. Unsung heroes who seem to do all the right things. If you have one feel blessed. And then *still* give that person something for the trouble. Something? Money!

But how much money? Well, how much do you make at work? Let's say, for discussion, $10.00 per hour. So for an hour prep, an hour talk and another hour to pick-up and put away – that's $30.00 minimum. Too much? Especially when you don't have unlimited resources. And, after all, it was a member, right? And, he(she) is an experienced beekeeper and does this all the time, right? Well, how many times do you work overtime for your boss without some compensation? Some, I suppose. But it's not a habit I'll bet. It seldom is.

The other side is, what's a talk worth? Well, if you learn how to save a colony, or cut your harvest time by 20%, or how to make dipped candles, or a better way to catch swarms, or a

*Continued on Page 594*

# Reader Assistance

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We encourage letters to the editor on any subject whether appearing in the magazine or not. Direct your letters to: Editor, P.O. Box 706, Medina, OH 44258. We reserve the right to edit letters for content and length, but will avoid this if possible.

# Coming Soon

November. Pretty much down time. Way up north snow's piling up up up. In the middle it's cold, gray, brown and tolerable. Down south it's still late fall, even T-shirt weather somedays, just like out west. Except in the mountains. Skis and the like. Nobody, well hardly anybody is doing bees. Maybe way, way down south. Way down. But that's all. The rest of us kind of wait, maybe a quick look, but not much is happening inside those buzzing boxes.

Good time to read. Catch up. Get ahead. Relax a little. And, good stuff to read in *Bee Culture* next month. Lots and lots of good stuff.

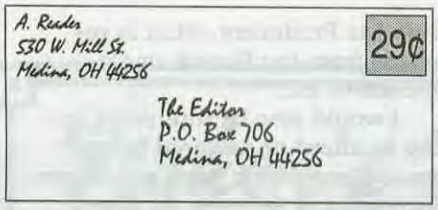
Nova Scotia has been very successful in their regulation program because the government gave up the responsibility and turned it over to the beekeepers. After several years (and several budget cuts) it's still going strong. See why, and see how a good program works.

Mark Winston takes a close look at 'Peer Review, something scientists take real seriously, but that we never, or hardly ever, see the results of. Maybe we should have a better idea of what bee research is all about.

And what about E-Mail? If you still feel like road kill on the Information Super Highway, our cyberspace consultant has just what you've been waiting for. Check out Stan Kain's next piece next month.

Since it's getting close to Christmas, we thought we'd pass along a great little piece on working with wax. Making, and selling beeswax can be profitable and fun.

And finally, a bit of nostalgia next month. A look behind that old barn, with it's three or four hives, just like when I was a kid How many times have we all heard that line? Explore a bit of that history, right here, next month. In *Bee Culture*.




# MAILBOX

## Honeysuckle Bush

I am a beekeeper in Cincinnati, Ohio and a subscriber to *Bee Culture*. I read Mr. Henry Yoder's letter in the July 1994 issue asking about "honeysuckle bush." He stated that this bush is a valuable honey plant and wished to find a source of the plant.

This bush grows in profusion on my ten acres of field and woods and I spend a good deal of time chopping it out. I don't believe one ever gets rid of it but can only hope to control it.

I could easily pull up several dozen small plants and send them to him but my conscience will not let me do it. We must learn our lesson about introduction of exotic plants and animals. Remember the Starling. It was imported and has decimated native songbird populations. An even better example was described in an issue of *Bee Culture* earlier this year. The plant, Loosestrife, was deliberately spread as a good honey plant and now has choked out native plants on thousands of acres.

Further, despite the heavy blooms of bush honeysuckle, my bees do not visit the blooms very much at all. I suspect the nectar is not that reachable. There are many other plants that are good sources of nectar without the downside of bush honeysuckle. I'd urge others to try them instead.

John A. Winter
Cincinnati, OH

## Promoting CO Honey

The Colorado Beekeepers' Association held their summer meeting in Salida. One of the topics of discussion at the meeting was finding ways to promote U.S. Honey. Colorado beekeepers are just as discouraged as other beekeepers throughout the U.S. as to the promotion of adulterated and contaminated honey from China that is taking our market. The Association has voted to support PUSH, the program developed by the American Honey Producers Association to Promote U.S. Honey. Also we are working to come up with new ideas to promote Colorado honey. Believe it or not all packers of honey in Colorado have not yet had to stoop so low as to use the Chinese product. These packers have pride in their label and refuse to sacrifice the high quality honey they are using for a cheaper honey with a lower price.

We are currently working on developing a logo that will show the honey is from Colorado and is endorsed by the Colorado Beekeeping Association. This will be available to the packers that choose to use it and it may also be incorporated into their existing label. We feel that if we can educate the consumer that Colorado honey is clean and pure and of high quality that they will choose our honey without a doubt. Good luck to the rest of the states as you come up with ideas that will also help promote your U.S. honey.

Lyle Johnston
Rocky Ford, CO

## Electronic Beekeeping

I am writing to express my appreciation and approval of the article *Bees & Bytes* by Stan Kain in the July Issue of *Bee Culture*. As a hobbyist beekeeper I have benefited immensely from the resources available on the Internet. Professionally, a portion of my responsibility here at the University is working with the College of Resource Development (nee Ag. School) and I am acutely aware of the increasing amount of digital information related to all fields of agriculture that is out there. At the same time there is a degree of resistance among traditionalists to this new technology. I feel it is increasingly important to make beekeepers (and others) aware of the volume of information that is showing up electronically first and only later being distributed by other means. Mr. Kain's article provided, in my judgement, both the right sense of motivation and sufficient detail to get people started. The appearance of the article was especially timely for me since I will be speaking to the Rhode Island Beekeepers Association in the fall on the topic of apicultural information on the "information superhighway." At our July monthly meeting I was able to point our members to *Bee Culture* and Stan Kain's article as a reference source.

I was also greatly pleased to see in reading "The Inner Cover" that *Bee Culture* itself will be making information available electronically in the near future. It is steps such as this which makes *Bee Culture* a leader in its field. Might I suggest that strong consideration be given to establishing a regular column devoted to information services since both the amount of material and the variety of options for delivering this information are changing literally daily.

Again, thank you for a very timely article and a fine publication.

David Clayton
Kingston, RI

**Editor's Note:** Stan Kain will have another contribution soon on this subject. Meanwhile, you can contact us here at *Bee Culture* by E-Mail at BCULTURE@AOL.COM.

We encourage letters to the Editor about any subject or topic, whether appearing here previously or not. Our Mailbox is a sounding board for new ideas, a forum for discussion and a Billboard for opinions. Send your contributions by regular mail, Fax at 216-725-5624 or E-Mail at BCULTURE@AOL.COM.

## Moving Honey, Easily

Dan Turbeville asked Richard Taylor in the July issue about getting his bees to move honey out

*Continued on Next Page*

# MAILBOX

of old combs. There is a solution intermediate between his proposal and Richard's response. This is to put only a few frames at a time in an empty super above an inner cover with the hole open. Scrape the cappings off first so that liquid honey is exposed in all cells. Confining the frames this way eliminates the risk of starting a robbing frenzy out in the beeyard. First, though, follow the usual admonition to let the PDB fumes dissipate for at least 48 hours. Here is a good way to accomplish this without exposing those honey-filled combs to robbing. Start with a couple of 4 x 4's or 2 x 4's blocking an empty super up off the ground. On top of this place a piece of screen wire and then the super(s) of honey. Top this with another piece of screen wire held in place with another empty super. I've done this numerous times and it works fine.

Dan Hendricks
Mercer Island, WA

## Australia's Almonds

I recently ran across an article from Australia that contradicts a bit what I said in the article on almond pollination (almond areas world-wide are very limited) in the September issue.

Before making that statement I talked with a CA farm advisor that recently returned from Australia and asked him specifically what he thought of it's (almond) potential. He thought it was very limited (to a few thousand acres), which disagrees with the article.

Joe Traynor
Bakersfield, CA

## Marketing Info

My name is John Cox and I am at present about to start the last year of a degree course in Marketing for which I am required to complete a dissertation on any aspect of marketing.

I have chosen World Wide Honey Marketing as my subject, how Marketing Boards or Co-operatives work, what is required from the Producers, what is required from the Boards or Co-operatives etc.

I would also be interested in any localized or national promotional ideas which have either been successful or failures. As a beekeeper, I can appreciate some of the problems involved with this.

If anyone could send me any information on the above subjects, I would very much appreciate it and endeavor to reply to all correspondents without delay.

John Cox, 9A Beech Close
Market Deeping Peterborough.
PE6 8LL England

## K.I.S.S.

I enjoyed your article *The African Experience*. I only find it difficult to keep track which column to jump to next. If you'd written Dr. DeJong and Dr. Morse the same way you did with Jeff Siggins it would have been a better layout. Just remember the meaning of K.I.S.S.

Brian Hanscom
Warwick, RI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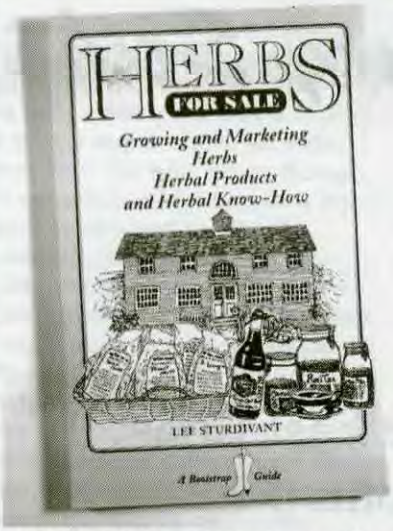
# Book Reviews . . .




*Herbs For Sale: Growing and Marketing Herbs, Herbal Products and Herbal Know-How* by Lee Sturdivant is essential reading for anyone interested in owning and operating an herb business. Herbs for Sale profiles a wide variety of herb-related businesses from Florida to Washington and British Columbia, and from California and New Mexico to Vermont and Maine. Sturdivant's insightful interviews, relevant questions and thorough detail make this book an extremely valuable reference for newcomers and experienced business people alike. The businesses range from growing and selling culinary herbs from a backyard garden or small acreage to manufacturing and selling herbal extracts, leading herb walks, operating an herb farm, blending and marketing medicinal teas, wildcrafting, creating and selling potpourris, writing an herbal newsletter, offering herbal lunches and more. Readers will learn from a variety of successful herb-business people how to stay profitable and solve problems, as well as how to grow and market herbs. Each chapter is full of solid, down-to-earth advice on owning and operating an herb business. Major divisions include "Herb Growing," "Herb Farms," "Herbal Products," "Teaching About Herbs" and "Other Business Possibilities." Each sections features a comprehensive reference list of sources and resources for further study and inquiry.

*Herbs For Sale* is published by San Juan Naturals, P.O. Box 642, Friday Harbor, WA 98250.

Paula Oliver

*A colour guide to pollen loads of the honey bee.* By William Kirk, published by the International Bee Research Association, 18 North Road, Cardiff, CF1 3DY £13.50 (UK & EU), £14.50 (elsewhere).

This is an exciting new guide to pollen load identification.

Beekeepers everywhere are fascinated by the sources of pollen brought back to the hive by their bees. Being able to identify the plants producing this pollen is the key to unlocking important information about beekeeping in your area.

William Kirk and a team of researchers collected pollen loads from all over Britain and painstakingly identified their origins – giving us surprising evidence of natural variations in colours seen at hive entrance.

The guide contains a key of over 500 colours, and describes the pollens of 268 plant species found in Britain. There is also an account of how this book is useful as a practical guide to pollen identification. The text is given in English, French and German, because of the wide demand for such a book throughout Europe.

*A colour guide to pollen loads of the honey bee* builds on Dorothy Hodges' classical work, but goes beyond it because of the number of species covered and accuracy achieved with modern printing processes.

It is a must for every beekeeper.

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The "honey and beeswax how-to specialists" at Valley Hills Press offer three products for beekeepers and those interested in crafting natural products.

1) *Super Formulas, Arts and Crafts* is a 120-page book containing more than 360 formulas (recipes) to make products that contain honey and beeswax ($14.95 U.S. funds, postpaid to U.S. & Canada).

2) Beeswax Soap-Making Kit ($23.95 U.S. funds, postpaid to U.S. & Canada).

3) Mead Kit to make honey wine ($18.95 U.S. funds, postpaid to U.S. & Canada).

For more information call 1-800-323-7102 or write to Valley Hills Press, 1864 Ridgeland Drive, Starkville, MS 39759.

*Apiculture.* Ed. by Pierre Jean-Prost. Published by Intercept Ltd., P.O. Box 716, Andover, Hants, 5P10 1YG U.K. (Translated from French Sixth Edition.) 660 pgs. Hardcover.

*Apiculture* is one of, if not the most popular reference and how-to beekeeping books published in France. The sixth edition is the first translated into English.

Hobby and sideline beekeeping is far more popular than commercial in France and this book reflects that.

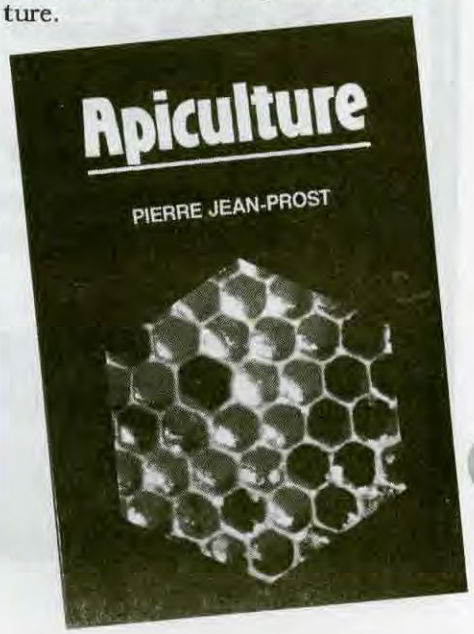
Chapters include basics such as queen, worker and drone biology; starting up; seasonal management; adult and brood diseases; moving bees; producing propolis, royal jelly and other products.

The authors treat each subject in great detail and support their findings and recommendations with a multitude of graphs, charts and tables. Far more than necessary for a basic how-to book, but good information for the student.

There are only a hand full of photos, but there are many drawings depicting the information discussed.

One aspect must be mentioned, and that is the treatment recommendations made for pests and diseases. First, many chemicals are legal to use in France that can't be used in this country. And, some problems exist there the U.S. does not have, or does not have in economic proportions.

With these precautions in mind, and the occasional translation snafu, this not inexpensive book gives insight into how bees are successfully kept in another country, another culture.



Precision Plastics has available its "HI-FLO" polyethylene plastic spout for honey producers. It features a larger inside spout opening for better flow. It has a highly polished finish for excellent presentation.

Caps come in 11 stock colors – red, green, steel blue, black, grey, brown, yellow, natural, purple, blue and white. Custom colors are available, as are pressure sensitive liners. Comb spouts and tops are also available in any quantity, any time.

The orfice can be snipped to quarter inch opening and cap will still 'snap' on.

For more information contact: Blue Magic Products, Inc., P.O. Box 4175, Stockton, CA 95204, (800) 344-3244.


In 1992, The Edgar County Historical Society of Paris, Illinois began selling Christmas ornaments by carefully recreating historical landmarks and happenings of the community. The 1994 ornament commemorates the first day issue of the 1980 embossed envelope by the U.S. Postal Service honoring the honey bee.

The ornament of pearl white shows the cachet of the first day issue chosen by the historical society in 1980. The drawing was taken from the book *The Covered Bridge* written by Carl Killion.

Price of the ornament is $9.95. You may purchase a marble stand to display it for $2.50. Illinois residents must include 6¼% sales tax which would total $13.23 for both ornament and stand. Cost of mailing is $2.00 for the ornament or $2.50 for ornament and marble stand.

The limited edition can be purchased from the Edgar County Historical Society, 414 North Main, Paris, Illinois 61944.

A portable cap tightener that is an ergonomic alternative to hand tightening in small quantity production applications which cannot justify installing fully automated equipment is available from Nichols Specialty Products, Inc. of Southboro, Massachusetts.

The Kinex Capper can be suspended over a work station, is well balanced, and features a flexible shaft with a chuck at the end to tighten closures. An ergonomic alternative to tedious hand tightening, this capper uniformly applies up to 50 in-lbs. torque by means of a spinning weight and recycles fully within one second.

Available with a wide selection of field changeable chucks for handling closures from 10 mm to 120 mm, including pump top dispensers, the Kinex Capper can be supplied with an optional overhead trolley for use at multiple work stations. It is ideal for seasonal applications and as a standby for automated lines.

The Kinex Capper is priced from $1,155 and includes a suspension hook and mounting hardware. Literature is available on request.

For more information contact: Nichols Specialty Products, Inc., Norman Wellman, Sales, 10 Parker St., Southboro, MA 01772, (508) 481-4367, FAX (508) 481-7806.

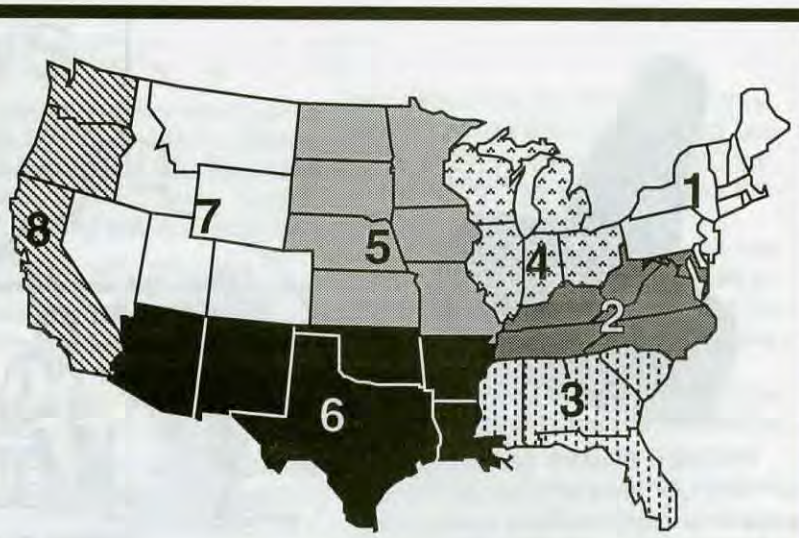
# . . . & New Products

# OCTOBER Honey Report

October 1, 1994

## REPORT FEATURES

**Prices shown are averages from many reporters living in a region, and reflect that region's general price structure. The Range Column lists highest and lowest prices received across all regions, from all reporters.**




| | Reporting Regions | | | | | | | | Summary | | History | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | Last | Last |
| Extracted honey sold bulk to Packers or Processors | | | | | | | | | Range | Avg. | Month | Yr. |
| **Wholesale Bulk** | | | | | | | | | | | | |
| 60# Light | 38.96 | 41.88 | 42.01 | 35.87 | 29.40 | 40.03 | 36.30 | 46.50 | 29.40-56.00 | 40.62 | 43.17 | 42.63 |
| 60# Amber | 35.35 | 40.58 | 29.78 | 35.40 | 39.40 | 39.57 | 32.00 | 45.00 | 24.00-51.00 | 37.82 | 40.97 | 39.81 |
| 55 gal. Light | 0.56 | 0.62 | 0.65 | 0.50 | 0.51 | 0.55 | 0.52 | 0.65 | 0.48-0.90 | 0.58 | .54 | .576 |
| 55 gal. Amber | 0.51 | 0.59 | 0.57 | 0.46 | 0.49 | 0.49 | 0.45 | 0.60 | 0.40-0.78 | 0.53 | .50 | .528 |
| **Wholesale - Case Lots** | | | | | | | | | | | | |
| 1/2# 24's | 21.04 | 24.55 | 23.15 | 21.00 | 18.15 | 20.13 | 22.50 | 19.60 | 17.35-30.00 | 22.09 | 22.42 | 21.50 |
| 1# 24's | 30.36 | 33.63 | 34.40 | 30.33 | 29.15 | 30.56 | 29.75 | 28.60 | 24.00-48.00 | 31.19 | 30.39 | 29.87 |
| 2# 12's | 28.51 | 31.29 | 31.61 | 28.27 | 26.15 | 26.92 | 28.75 | 32.00 | 25.25-40.00 | 29.58 | 29.09 | 28.10 |
| 12 oz. Plas. 24's | 27.38 | 31.76 | 32.91 | 24.98 | 25.00 | 24.94 | 27.50 | 24.10 | 22.80-48.00 | 27.92 | 26.72 | 26.44 |
| 5# 6's | 28.26 | 30.00 | 30.70 | 31.07 | 29.04 | 27.05 | 27.75 | 29.15 | 26.90-35.45 | 29.75 | 30.51 | 29.62 |
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| 1/2# | 1.39 | 1.90 | 1.25 | 1.15 | 1.09 | 1.22 | 1.13 | 1.13 | 0.94-3.50 | 1.38 | 1.44 | 1.25 |
| 12 oz. Plastic | 1.54 | 1.79 | 2.00 | 1.49 | 1.38 | 1.49 | 1.62 | 1.41 | 1.19-2.15 | 1.59 | 1.65 | 1.58 |
| 1 lb. Glass | 1.78 | 1.96 | 2.00 | 1.99 | 1.73 | 1.73 | 1.85 | 1.65 | 1.39-2.69 | 1.83 | 1.85 | 1.82 |
| 2 lb. Glass | 3.09 | 3.45 | 3.50 | 3.28 | 2.42 | 2.92 | 2.95 | 4.25 | 1.72-4.25 | 3.24 | 3.13 | 3.23 |
| 3 lb. Glass | 4.13 | 5.14 | 4.50 | 4.36 | 3.51 | 3.83 | 4.55 | 4.32 | 2.78-5.95 | 4.34 | 4.29 | 4.33 |
| 4 lb. Glass | 5.14 | 5.76 | 5.50 | 5.75 | 3.69 | 4.97 | 4.95 | 6.79 | 3.69-6.99 | 5.48 | 5.51 | 5.73 |
| 5 lb. Glass | 6.29 | 6.97 | 6.50 | 6.76 | 6.10 | 5.97 | 6.23 | 6.14 | 5.40-8.95 | 6.52 | 6.58 | 6.55 |
| 1# Cream | 2.68 | 2.78 | 3.52 | 1.79 | 3.39 | 2.79 | 3.05 | 1.84 | 1.69-6.18 | 2.69 | 2.22 | 2.37 |
| 1# Comb | 2.98 | 2.90 | 2.75 | 3.25 | 2.81 | 3.70 | 4.00 | 2.99 | 2.42-4.00 | 3.14 | 2.96 | 3.28 |
| Round Plastic | 2.82 | 2.92 | 2.91 | 2.89 | 2.95 | 3.48 | 2.91 | 2.95 | 1.70-4.00 | 3.02 | 2.78 | 2.88 |
| Wax (Light) | 1.95 | 1.98 | 1.80 | 1.43 | 2.42 | 1.55 | 1.30 | 1.70 | 1.20-4.00 | 1.98 | 1.53 | 1.79 |
| Wax (Dark) | 1.48 | 1.40 | 1.50 | 1.30 | 1.30 | 1.07 | 1.20 | 1.33 | 1.00-3.40 | 1.48 | 1.23 | 1.36 |
| Poll. Fee/Col. | 27.78 | 24.17 | 30.00 | 32.50 | 25.00 | 21.88 | 35.00 | 32.00 | 12.50-55.00 | 28.83 | 29.35 | 32.54 |

### MARKET SHARE

We polled our honey reporters this month about Chinese honey in their markets. The bigger the operation the greater the effect. Small scale retailers are least (if at all) affected. However, the lower prices are creeping into every market. Producers are seeking anti-dumping legislation. Will it be in time? Will it be enough? Will it work?

### *Region 1*

Prices down generally with a few exceptions. Demand seems steady at local level, but declining at wholesale level. Wholesale sales, specifically, have been hurt recently, generally attributed to lower prices from imports. Retail hurting at mass market level, too.

### *Region 2*

Prices up from last month overall, mostly due to new crop and specialty crops. Sales to wholesalers and packers have slowed and those prices are down. Bulk and bakery sales affected by low-cost imports dramatically, but retail sales seem less troubled. Direct sales account for this.

### *Region 3*

Prices up a bit from last month but sales only steady to even a bit slower. Strong competition from imports is giving local and specialty crops problems, but farm markets and fall festivals holding their own.

### *Region 4*

Prices steady to a bit lower, especially at the wholesale level. Lots of imported and locally produced honey available, though some local now under loan. Imports have kept wholesale prices, lower than local producers prices – not a good sign.

### *Region 5*

Prices down, even though regional harvest not as high as expected. Imports strongly affecting wholesale prices, and that is filtering up to retail shelf prices. Local, farm market prices remain strong.

### *Region 6*

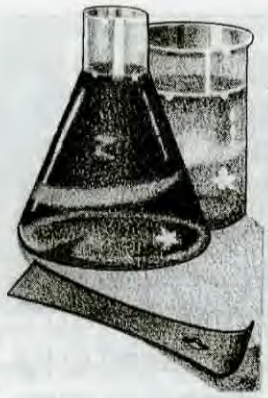
Overall, prices steady, but large lot wholesale prices in the 42-45¢ region. Farm market and back door sales doing well, but only in small lots. Imports have dominated bakery and similar markets.

### *Region 7*

Prices steady at retail level, but wholesale prices falling. Imports affecting sales and prices at nearly every level. Moreover, production less than anticipated so local honey at a premium. Spray problems worse than usual this year, hurting many producers.

### *Region 8*

Prices and sales steady to rising just a bit but the bulk and wholesale market is a mess. Packers either not buying, paying very low prices or paying in 60-120 days. Small lot and local sales hurt by reduced tourism this season.



# RESEARCH REVIEW

roger morse cornell university ithaca ny

*"Grease patties are effective in controlling tracheal mites, especially in the north."*

Treating colonies continuously with solid vegetable oil (Crisco® as made by Procter and Gamble) patties with sugar gave good control of tracheal mites. Vegetable oil patties with Terramycin, used for bee disease control, were almost as effective as oil patties alone. The patties were placed on the top bars of frames in the lower super in colonies with two supers.

The oil patties were made using one part Crisco® and two parts *granulated* sugar thoroughly mixed. When Terramycin is added, the patties were made using three pounds of Crisco®, six pounds of granulated sugar and 100 grams of TM50. This formula, designed by Dr. William Wilson in 1970, has been widely used and proven to be effective. The patties weighed about 300 grams or 12 oz. each.

This research was done in apiaries near Columbus, Ohio. The authors point out, and it is important to understand, that tracheal mites are more serious in the northern states where the bees are confined for long periods of time.

Someone might question the legality of the continuous treatment of a colony with oil patties. According to Environmental Protection Agency regulations a material that is used as a pesticide or a repellent becomes a pesticide when it is so used. While it is clear to you and me that Crisco is not really a pesticide, what is common sense is not always what governs the legality of what is done. I understand that the EPA is being asked to rule officially on the use of patties, even during a honey flow. However, the use of Terramycin must be stopped four weeks before the start of a honey flow from which the honey will be harvested.

## Statistics and Economics

A U.S. Department of Agriculture survey of the beekeeping industry in the late 1980s involving 688 producers, 112 packers and 17 importers has just been published. While much of the data is out of date it is still interesting and worthwhile to know where we have been and what the status of the industry was during the last decade. Since the survey was taken before the mite invasion much has changed.

In 1988, 53% of commercial beekeepers income came from honey payment programs. Only 22% of the beekeepers surveyed had pollination income. Both of those figures have changed greatly.

The number of colonies of honey bees in the United States peaked at 5.9 million in 1947 and declined to 4.1 million by 1972. The number remained more or less constant for the next several years but then declined to three to 3.4 million more recently. Nearly 40% of the colonies are found in four states: California, North Dakota, South Dakota and Florida.

The report listed below is packed with a variety of statistics and facts concerning the beekeeping industry, including the USDA grades for honey that almost no one uses but that keep cropping up here and there. Copies of this report are available from the Economic Research Service -NASS, 341 Victory Drive, Herndon, VA 22070 for $12 per copy.

## Queen Survival in Two-Queen Colonies

When the queens in two-queen colonies, which had earlier been separated by excluders were allowed to contact each other, they fought and it was the younger queen that won the fight in 86% of cases. As the authors point out, there has long been a question as to what happens to the queens in two-queen colonies when they are allowed to contact each other. The purpose of this study was to determine if the two-queen system of management is a good method for requeening colonies.

In these studies, stackable single frame observation hives were used. Each of the hives had its own entrance. The lower hive contained bees, brood and a one-year-old queen. The upper hive was the same except it contained a young, newly mated queen. The two were separated by a queen excluder that was removed after seven to ten days.

Several other nagging questions were answered in this study. For example, the worker bees were not antagonistic toward either queen and did not participate in the fighting. Queens apparently recognize each other only at short distances, a little more than an inch. Queens did not quickly enter the opposite unit after the excluders were removed and there was no rush, on the part of any queen, to seek out her opponent.

These studies confirm that allowing the queens in two-queen colonies to fight among themselves will generally result in the younger queen gaining control of the hive. BC

**References:**

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# ? DO YOU KNOW ?

## *Disease Recognition*

clarence collison

The first line of defense in protecting your colonies from bee diseases is your ability to detect and recognize the early symptoms of the various diseases. Failure to recognize even the minor diseases can lead to lower honey production and weakened colonies. During the fall inspection, colonies need to be carefully checked for disease and treated if disease symptoms are found or if a preventative program is followed.

How familiar are you with bee diseases and the appropriate control measures? Please take a few minutes and answer the following questions to determine how well you understand these important topics.

---

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

1. ___ European foulbrood spores remain viable in brood combs for many years.
2. ___ The viability of American foulbrood spores decreases when a cell containing scale (dead larval/pupal remains) is filled with honey.
3. ___ American foulbrood can affect worker, queen and drone brood.
4. ___ There is strong evidence to suggest that *Bacillus larvae*, the bacterium that causes American foulbrood is becoming resistant to oxytetracycline HCL.
5. ___ Currently there are no chemical compounds registered in North America for the control of chalkbrood disease.
6. ___ European foulbrood scales are much easier to remove from cells than are American foulbrood scales.
7. ___ The susceptibility of larvae to American foulbrood disease decreases with increasing age and they become immune 53 hours after egg hatch.
8. Even though apiary laws vary from state to state, list three control methods currently used in different areas for the control of American foulbrood (3 points).
9. Beekeepers often requeen colonies with sacbrood, chalkbrood, or European foulbrood in hopes of controlling the disease. Give two reasons why requeening may be an effective means of improving a disease situation (2 points).
10. Name three ways in which American foulbrood is transferred between colonies. (3 points).
11. It has been determined that the $LD_{50}$ of *Bacillus larvae* (the pathogen that causes American foulbrood) is 35 spores in one-day-old honey bee larvae. Please define $LD_{50}$. (1 point).

Please match the following disease characteristics, symptoms or descriptions with the correct disease. (1 point each).

A. Nosema disease
B. American foulbrood
C. Chalkbrood disease
D. Stonebrood
E. Chronic bee paralysis
F Septicemia
G. Amoeba disease
H. European foulbrood
I. Sacbrood disease

12. ___ The vegetative form of the pathogen is rod-shaped, forms oval endospores that are highly resistant to desiccation, heat and chemical disinfectants.
13. ___ Disease caused by the fungus *Ascosphaera apis*.
14. ___ When the pupal stage is killed, the resultant scale may have the so-called pupal tongue.
15. ___ State bee disease laws were, for the most part, enacted to abate this particular disease.
16. ___ Cappings over diseased brood are dark brown, usually punctured and sunken into the cell.
17 ___ Infected larvae usually die while still in the coiled stage.
18. ___ Soon after becoming infected the larva is overgrown with a white cotton-like mycelium which fills the entire brood cell.
19. ___ The infected larva may be covered with green powdery fungal spores.
20. ___ The infection occurs in the malpighian tubules of adult bees.

ANSWERS ON PAGE 592

# Tracheal Mite Resistance

Styer photo

gordon d waller

Several years ago, as a speaker at the Eastern Apiculture Society's Honey Bee short course, I discussed my views about the importance of using terramycin extender patties to control American foulbrood. All over the room the hands of beekeepers went up to speak against the introduction of chemicals into beehives because such a practice prevents the bees from acquiring natural immunity against the disease.

Have you seen the "bees for sale" ads this year? Some advertise colonies treated with Apistan, menthol, Fumidil-B and Terramycin. About the only "disease" problem not on our agenda for chemotherapy is chalkbrood. Fortunately, no chemotherapeutic agent has been found that will effectively control chalkbrood so we've been forced to select bees that are chalkbrood resistant.

The jury is still out on the impact of the honey bee tracheal mite on beekeeping in the U.S. Presently we hear reports that thousands of colonies are dying each year from tracheal mites, but also there are reports that this pest is of little or no consequence because U.S. bees have now acquired natural immunity against the it. Also, at one time people claimed the mite was not a problem to bees kept in the warmer southern states. Now I hear that serious bee losses occurred in central Arizona this past winter.

Two recent articles in *Bee Culture* were entitled "Start Now and Control Tracheal Mites This Year" and "Tracheal Mite Research The Next Generation." These articles describe the present confusion and lack of fundamental knowledge of the mite. We may be operating under a cloud of pessimism about the resistance that is out there in our bees today Granted, we don't know the mechanism for the mite damaging the susceptible honey bees, nor do we know the mechanism by which the mite-resistant bees protect themselves. Just how important is it that we have this information?

It is ten years since we discovered the tracheal mite in our country. Those colonies remaining here today are the survivors, because huge numbers of susceptible colonies have died and were not available to reproduce. Now you can increase the level of resistance in your bees by always bringing in stock selected and raised where a high level of mite infestation is at work killing the susceptible stock and by never using any chemical treatment that would assist the susceptible stock to survive and reproduce.

**It seems appropriate that buying resistant stock is a first step in getting off the chemical merry-go-round.**

There has been much fanfare about government-funded importation of honey bees from Europe to introduce resistance. One report even suggests that this activity proves how much the government wants to help the beekeepers – or some such thing! It's my understanding that beekeepers who have tried these bees – introduced from England or from Yugoslavia – have found them to be lacking in characteristics needed for successful commercial beekeeping. I made this statement about the 'Yugo' bee in a speech earlier this year and was challenged about it by one of its proponents.

My position is that we should be selecting for resistance to the from our own bees that have proven to be of use commercially. We've done this here in southern Arizona and our good, commercial stock developed resistance more quickly even than our most optimistic expectations. Some of our customers really praise this development (and the queens they have purchased) for saving their bee business from the devastating effects of thetracheal mites.

Management tools for controlling the mite do exist. And, even though menthol is legal it is not reliable under many climatic conditions. Grease patties do offer some hope, but again, they are another 'chemical.

It has been suggested we lack proper methods for maintenance and distribution of the bee stock resistant to mites. Nevertheless, it would seem obvious that purchasing resistant stock, at least in small numbers, when it is offered for sale would be an appropriate first step for getting off the chemical merry-go-round. You might be able to eliminate one poison from the arsenal of chemicals used to make war against honey bee pests and diseases. BC

*Gordon Waller is a queen breeder and former apicultural researcher. He lives in Tucson, AZ.*

WHAT HAPPENS IN 1996?

# Border Closure

mark winston

On January 1, 1988, all importations of honey bees were prohibited from the United States into Canada. This ban was enacted following the discovery of *Varroa* mites in the United States, and followed increasingly strict sets of import regulations enacted since 1984 to prevent the importation of tracheal mites into Canada from the United States. The initial 1988 embargo on bee importations was for two years, and has been renewed every two years since its initial enactment. Hawaii, however, has been exempt from the quarantine regulations since 1992, following extensive surveys that failed to discover either *Varroa* or tracheal mites anywhere on the Hawaiian Islands. The quarantine against the importation of bees from the mainland U.S. into Canada will remain in place until December 31, 1995, at which time it will either be renewed or modified to permit some level of importations. The crucial decision concerning whether the beekeeping industry wishes to have the border re-opened will be discussed at the annual Canadian Honey Council meetings in January, 1995. This will be an interesting meeting, and prior to that I thought it might be useful to review the wisdom of the initial border closures and to look forward and speculate as to whether opening the border in 1996 will be in the Canadian interest.

At the risk of offending my American readers, I believe that the border closures to date were the appropriate actions to take, and have been justified by having successfully protected Canadian beekeepers from both tracheal and *Varroa* mites. The objective of quarantines is to protect the majority interests from medical or agricultural damage that foreign pests or diseases can cause. Quarantines are not necessarily designed to prevent pest entry forever, although some quarantines have that objective. Rather, quarantines generally attempt to slow the progress of a potentially harmful pest as long as possible, or at least as long as the quarantine is economically preferable to the damage the pest may cause. In both these objectives, economic protection for the majority of Canadian beekeepers and slowing the spread of tracheal and *Varroa* mites, the Canadian ban on bee importations from the United States has been a success.

The first aspect of the border closure that many American beekeepers have not recognized is that this importation embargo was initiated due to broad support from Canadian beekeepers. There seems to be some feeling among U.S. beekeepers that a small cadre of misinformed government and university personnel enacted the quarantine, against the wishes of most Canadian beekeepers. This is not the case; almost every Canadian Provincial beekeeping organization has actively lobbied in favor of the quarantine before and since the original 1988 closure, and our national beekeeping organization, the Canadian Honey Council, effectively lobbied to initiate and continue the border closure based on that broad Provincial support. There has been some opposition, particularly from beekeepers in the Peace River area of British Columbia and Alberta who prefer package bee systems. However, I think it fair to say that most beekeepers in Canada, and certainly their officially constituted organizations, have strongly supported the border closure to date.

There also have been some misconceptions concerning the objectives of our embargo. None of us in Canada believed then, or believe now, that the embargo would prevent the arrival of either *Varroa* or tracheal mites. Rather, the border closure was originally designed to slow the spread of these mites as long as possible, for two reasons. First, our pesticide licensing process in Canada is considerably longer and more involved than in the United States, and in 1988 we had no registered chemicals to use against either mite. It was only last year that fluvalinate was registered for use in Canada, finally providing our beekeepers with some chemical protection against *Varroa*. Second, our beekeepers believed that we could slow the mites' spread to such an extent that widespread, expensive treatments could be delayed for many years, a belief that the ensuing years have proven correct. When the last ban was enacted in January, 1993, tracheal mites were present in only

*Continued on Next Page*

**"... quarantines generally attempt to slow the progress of a potentially harmful pest as long as possible, or at least as long as the quarantine is economically preferable to the damage the pest may cause."**

*BORDER ... Cont. From Pg. 557*

16% of Canadian colonies and *Varroa* in fewer than 1% of our colonies, and those in a very few locations along the United States-Canadian border. Savings in treatment costs alone have exceeded $3 million annually, well worth any negative impact caused by the embargo.

The border closure also benefited Canadian beekeepers in other ways, particularly by stimulating more self-sufficiency in our beekeeping operations, although that was *not* a primary objective of the importation embargo. Many of our beekeepers have found that overwintering systems are more cost-effective than the previous package bee management methods generally used. In addition, queen rearing, package bee production and sales of nuclei have provided new sources of income for our Canadian beekeepers, and the diversity of new management systems generated by the need to be self-sufficient has been healthy for our industry.

Nevertheless, the quarantine has adversely affected some Canadian beekeepers. Beekeepers in the northern beekeeping regions of Alberta were the most seriously effected, because almost all of the beekeepers in this region depended on package importations. A number of beekeepers throughout Canada went out of business in the late 1980s, primarily due to low honey prices, although the sudden embargo on package importations in the late 1980s was a contributing factor in reducing the number of Canadian colonies from about 700,000 to 520,000 in 1992. Today, however, our colonies numbers have climbed back up to around 600,000, again more due to the increased price of honey than any other factor.

American beekeepers were the most seriously effected by the ban, and the embargo clearly has not been in the best interests of U.S. beekeepers. Before 1988, Canadians purchased over 300,00 packages a year from U.S. beekeepers, mostly from California but also from other package producing areas in the southern United States. Package and queen sales to Canada were valued at over $12 million annually when the border was closed, and loss of the Canadian market was a major blow to the U.S. industry. More than just sales were lost, however; many U.S. and Canadian beekeepers had developed close friendships, even marriages between families, and a number of U.S. and Canadian beekeeping operations had close economic ties. Package bees were a way of life for many, and the change to new systems proved to be a difficult adjustment for beekeepers on both sides of the border.

The future of the border closure is not at all clear at this point, but looking ahead to 1996 I can say that opinions in Canada are much more mixed than previously. *Varroa* and tracheal mites are becoming more widespread, although there are still large regions in Canada with no *Varroa* present, such as the province of Saskatchewan. The arguments favoring border closure focus on two issues, continued restriction of mite spread and Africanized bees. The arguments for opening the border balance those negative aspects with the economic advantage of cheap and easy access to spring queens and packages, although it is unlikely that package importations will ever approach their former levels.

**Correctly or not, mites and Africanized bees have changed the fabric of Canadian and American beekeeping forever, and looking to the past will not alter that fact. The package way of life is gone and, much as we may wax nostalgic about it, I don't think we will see package bees in a major way in Canada again.**

Slowing the further spread of mites in Canada by continuing the border quarantines is a judgment call; at some point it no longer will be justifiable to prevent importations on that basis, although the precise date when that happens is hard to predict. Certainly the registration of fluvalinate in Canada has changed the balance considerably, but beekeepers from non-infested regions still support border closures. The Canadian industry is much less mobile than in the United States, so that the spread of mites can be contained more effectively for a longer time than was possible in the U.S. Nevertheless, my best guess is that the tracheal and particularly *Varroa* mites will have spread sufficiently to relax the embargo on importations from the mainland U.S. sometime between 1996 and 1998. However, I think the quarantine will first be lifted on queens only, and that package bees will not be allowed into Canada for some time.

A more serious problem for importing queens or packages into Canada will be Africanized bees, which may surprise some American beekeepers. The Canadian concern over Africanized bees is based on our northern climate, which will prevent these bees from arriving here on their own. Since we are immune from their natural arrival, many of our beekeepers wonder why we would risk importing them as queens or packages, particularly since our industry is doing quite well without importations of any bees from the United States. There also is a "wait and see" attitude on this issue in Canada, since it is not yet clear how problematic these bees will be in the United States, and how successful queen rearers in the southern states will be in preventing

matings with feral Africanized bees. Any importations undoubtedly will require strict certification that the queens are not Africanized, which may be economically prohibitive when compared to early spring queens imported from Australia, New Zealand and Hawaii, or late spring and summer queens reared in Canada. Thus, opening the border to U.S. bees may not produce a huge influx of queens and packages, at least initially.

Whatever your opinion may be on the border closure issue, it is important to remember that past decisions to close the border have been widely supported in Canada, and have turned out to be in the best interests of the majority of Canadian beekeepers. The situation is slowly changing, however, and at some point the embargo on U.S. bees will be relaxed, probably within the next five years but possibly not as early as 1996. When the border closure is relaxed, it will still involve some inspection procedures to certify that imported bees are disease-free and non-Africanized, procedures that will be costly enough to limit the extent of importations into Canada. We won't see a wholesale return to package bee systems, except possibly in the Peace River region of Canada, and even there many beekeepers may choose to overwinter the majority of their colonies. Correctly or not, mites and Africanized bees have changed the fabric of Canadian and American beekeeping forever, and looking to the past will not alter that fact. The future of Canadian beekeeping will be largely self-sufficient, although imported queens will have a role to play. The package way of life is gone and, much as we may wax nostalgic about it, I don't think we will see package bees in a major way in Canada again. BC

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

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# Assignment Belarus

jerald ely

In late 1993, my wife, Junie and I were asked by Volunteers in Overseas Cooperative Assistance (VOCA) to go to the republic of Belarus to evaluate and assist two young beekeepers there who were making the change from communism to private enterprise.

Belarus is one of the new republics formed when the USSR was dissolved. Located east of Poland and west of Russia, Belarus is about the size of Kansas and has a climate similar to ours in northeast Pennsylvania, although the winters are not as severe. Belarus is a country of rich farmland and many forests. The language is Russian but VOCA provided an interpreter, for us.

Along with friends and relatives, I must admit that I had reservations about going to any part of the former Soviet Union. Being a World War II veteran and living through the cold war, I never dreamed that I would be living and working with people in Belarus. We found out later that they had the same misgivings about us. Most of the people we worked with had never met an American before. They knew only what their former government had told them, but they greeted us with joy and treated us with marvelous hospitality. We made some wonderful lifelong friends.

We began our assignment on September 14 in the capital city of Minsk, where we were briefed in the VOCA office there. On the second day we were given a tour of the area. Here we learned that the Nazis had most of their Russian Concentration Camps in Belarus. We saw many sad memorials of villages and people who were killed as the Nazis came through. The city of Minsk was leveled in WWII. Only two buildings were left standing.

From Minsk we traveled south to the young city of Soligorsk (35 years old!) to work with beekeeper Leonid Vovna and his wife, Svetlana. We stayed in their apartment and shared their family life for two precious weeks. Then we traveled to the old city of Vitesbk in the northeast cor-

*Continued on Next page*

*Typical Belarussian hive showing the thick walls.*

# TAKE A TRIP

dewey caron

Have you been on a trip to a foreign country before? A number of beekeepers have visited "over there" as part of a tour. Beekeeper tours of foreign lands include a lot more than just bees. One of their best features is the common interest of the tour members. You learn not just from what you see and visit but also from fellow tour members.

I had the pleasure to lead 24 beekeepers and their spouses on a tour to Costa Rica this past January. We had a large mix of individuals – from young to old, from commercial beekeeper to backyard hobbyists and east coast as well as west coast beekeepers. In Costa Rica we saw big and small operations, extremely aggressive African bees to gentle hybrids, queen breeders, pollination of melons and even the culture of stingless bees, practiced much longer than the keeping of honey bees in Costa Rica and the rest of the Americas.

Dr. Jim Tew, federal extension apiculturist and beekeeping Professor at Ohio State ATI has led tours to China and Australia/New Zealand. He too had participants from a variety of backgrounds and geographic areas, and on both trips they visited many types of beekeepers. He classified China as a "hard" trip with totally foreign language, food, culture and many beekeeping differences compared to the "easier trip" to beekeepers down under. Jim says he likes the "intensity of interest" of the participants. He finds the tours to be "graciously treated" and the beekeepers they visited were "very open, very sharing." They didn't seem to mind the questions, the looking behind doors, the asking what does this do, etc. type behavior from the U.S. beekeepers. He said one of the benefits

of his trips has been to "feel good about U.S. beekeeping." Many beekeepers use the same techniques and equipment. He says "we export our beekeeping experiences " very well.

Oliver Collins and his wife Lucille also were members of the Costa Rican tour. Oliver runs a full-time pollination rental business of 1,200 colonies on the Delaware/Maryland Eastern shore. It was their first international trip. Oliver like the "down-to-earth" approach and the fact that "we saw bees and beekeepers every day of the trip." He said "with a diverse group we got a lot from other members of the tour." Neither he nor his wife spoke Spanish but both felt there was "no problem understanding. (Their) beekeeping is a lot like our own." The chance to see and ask was what made the trip "well worthwhile, and really enjoyable."

*Exploring the exotic is both fun, and educational – for hosts and guests.*

Ellen Sundberg and her husband with 14 other beekeepers visited New Zealand beekeepers in February 1993. They saw "a good cross-section of beekeeping enterprises" during their 12-day trip. They often were entertained by "local beekeepers" of the National Beekeepers Association who "graciously hosted barbecues, luncheons and numerous social get-togethers which provided us with an opportunity to meet, exchange ideas and information." Ellen said they got much more than a "tourist" view of New Zealand.

If you haven't been "over there" you might consider a trip in the near future. One I recommend is a beekeepers' tour of Brazil for 12 days in January 1995. Bring warm weather clothes as it will be summer in Sao Paulo and Florianopolis, two areas you will visit. Dave DeJong is hosting and leading this tour. He is a North American who trained at Cornell and worked with me at Maryland before going to Sao Paulo where he has specialized in African bees and mites the past dozen years.

You will see plenty of bees in the south of Brazil. As on all the trips you will visit some large apiaries and honey extraction facilities but you will also see and meet hobbyists, bee researchers and farmers/urban dwellers like yourself. Dave will talk about and show the "miracle" of Africanized bees. The beekeeping industry of Brazil has successfully met the challenge, producing large quantities of honey with this bee. You will see it firsthand and get to talk with beekeepers on how they manage to get along with aggressive bees.

Beekeepers tours are not just bees. You will sample the local cuisine and enjoy the culture but not as an ordinary tourist. Beside bees, some highlights of the Brazil trip will be Iquassu falls (where you stay in a hotel on the edge of the falls itself), a guided tour of the sights in Rio de Janero and visits in the Italian and German settlements in southern Brazil, all in the comfort of air-conditioned private buses with overnight stays at first-rate hotels. Brazil will be an "easy" trip for travel but it will be a very different experience. All tours are highly educational with knowledgeable hosts and interesting visits.

So why not consider a beekeepers tour? It will be an interesting and unique visit to sample another culture but still be focused on the familiarity of beekeeping and you'll learn things to help make you a better beekeeper. I predict you will want to go again if you try it one time.

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*Dewey Caron is Professor and Entomology Extension Specialist at the University of Maryland. He is also Chairman of the Eastern Apicultural Society.*

ner of the country to work with Mikhail Vasilkov for a few days. The city of Vitesbk was founded by Princess Olga in 974 A.D. In Vitesbk we lived with Mikhail's family and enjoyed more wonderful Belarussian hospitality.

At the time of our assignment, late September, the beekeepers were making winter preparations. They were proud and anxious for us to see their bees and we looked into many colonies. Young Leonid Vovna was deeply involved in producing bee venom, using an electric shock system. He was looking for good markets for his dried venom – mainly in Europe and the Far East.

Almost all the colonies we saw were in large one-story hives – difficult to lift even one side. The sides often were two-inch thick wood. Most hives had at least two layers of wood plus a layer of siding. In addition there was space allowing room for insulation. These hives held 15 or 16 frames that were 12" deep. All the top bar lengths were standard 19" The uniformity in length rather surprised me. If fewer frames were used they inserted follower boards. What a brood nest!

Insulation was used inside the hive – pillows, sofa or seat cushions, winter insulated clothing and packing material, like quilts. We saw the pillow-size packing for sale in two different bee supply stores.

The inner cover consisted of a

*Continued on Next Page*

*Two beekeepers that operate 200 colonies on a collective farm.*

***BELARUS ... Cont. From Pg. 561***

number of separate pieces of 3/4" boards three to five inches wide that were laid loosely over a cloth that covered the top bars. On top of the inner cover was a layer of insulation in addition to that on the sides of the hive. There was usually air space between the insulation and the outer cover.

The brood combs we saw were in very good condition. I was impressed by the quality and the uniformity of the brood combs in these huge brood chambers.

Belarus had a poor honey crop for 1993. There was no fall flow so we were unable to observe any honey harvest. We did see some medium-depth frames and also observed extractors that would handle 12" deep frames. We were told that the honey crop for 1993 was about 10 pounds per colony. We did not have agricultural statistics available. Beekeepers told us that 40 to 45 pounds per year would be considered a good average.

Most of the beeyards we visited were on collective farms. One of these near Soligorsk – about 200 colonies – was owned by the potash company (the largest in the world). The beekeeper, Ivan, operating this apiary was hired by the company to produce honey for the workers. A very hospitable person, Ivan took time to explain any part of his beekeeping practices. He was paid a monthly salary, provided a vehicle and very nice living quarters. He was required to furnish a certain portion of his honey production to the potash company; the balance he could sell on his own. The company distributes the honey to the workers. We saw several operations approximately the size of Ivan's.

In general the beekeepers in Belarus are following good beekeeping practices. They have awareness of and treatments for bee diseases and *Varroa*. However, we saw no situation indicating any type of formal instruction, lectures or extension aid available to beekeepers. We were given a short tour of the Microbiology Laboratory at the Veterinary Institute in Vitesbsk. There were indications that research was being done in bee diseases and mites. Beekeeping courses were taught – but only to Institute students. At one of the collective farms I saw an excellent system for bee yard records – complete and simple.

Shortage of bee supplies is the single and most outstanding problem of Belarus beekeeping. We visited a bee supply store that served over a thousand beekeepers in the Soligorsk area and there was no woodenware – frames, hives – available whatsoever. Another store in Vitesbsk had exactly the same circumstances. In that store a half dozen or more beekeepers appeared. When I asked why they were there, the reply was that they thought we were bringing supplies to the store.

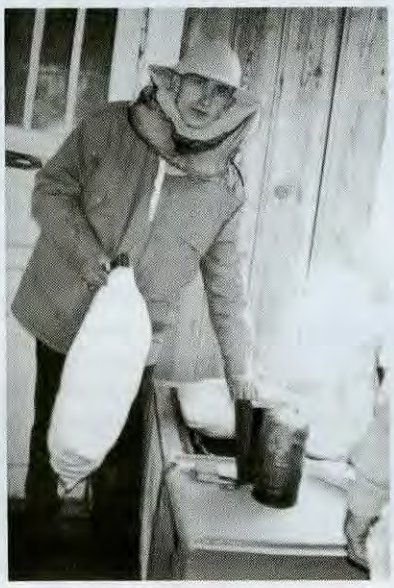
The two young beekeepers we worked with could rightly be called Belarussian pioneers in modern beekeeping. Both were experimenting with the use of single-walled multi-story colony operation. They were thwarted by the prohibitive cost in obtaining supplies to make this change. They had no tools to make any sort of equipment. One had hired a carpenter but the resulting product (made with hand tools) was undesirable. No one we met had a table saw. Another effort was made using styrofoam supers, covers and bottom boards. Bees had died in every one and the beekeeper was no longer using them. The problem was moisture.

It is difficult to comprehend the changes happening in a country that has been under communism for over 70 years. As one Belarussian said to us: "Over 70 years of barbaric power – not caring about land, air, rivers or human life." Changing to free enterprise (privatization) will take time. The road will be bumpy. The short time we were in Belarus was not enough to make a fair and total analysis of beekeeping there. Most of what we observed were practices used in our country many years ago. Coincidentally, I recently received from a relative a photograph of my grandfather's apiary in Brooklyn, Pennsylvania, dated 1914. There were approximately 35 colonies in neat rows. The back row consisted of colonies housed in the same style hives we saw in Belarus.

There is a real opportunity here to develop a good international relationship. The Belarussians accepted us completely – two families gave up their own bedrooms so we would be comfortable. hey wanted so much to know how we did things here. They sure could use our help – not in money or things, but in whatever we can offer in teaching and help in modern beekeeping techniques. This could be a rewarding undertaking. Junie and I have found that this manner of helping is what VOCA is all about. BC

*MikhailVasilkov and author inspecting experimenta "Multi-Story" colony in Vitesbk.*

*Leonid Vovna showing pillows used for insulation.*



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*Jerry Ely began keeping bees in 1947, and now operates Ely Apiaries in Montrose, PA. He runs about 100 colonies, sells honey and hive products and beekeeping supplies. He is an EAS Master Beekeeper and has taught beekeeping courses at VOC-TECH and association level. In 1992 he also worked with the Egyptian beekeepers in the same program.*

# A Fall-Time Dry Run With THE HONEY COMB KID

vincent doyle

The kid's got talent. No doubt about it. He tucks his new violin under his chin and starts to play. He hits a certain note and the instrument sings. Memory plays a strange trick on me and suddenly I'm back in time, another world, hurrying home from school to catch my favorite radio programs. Each one is introduced by its distinctive theme music. When *The Flight of the Bumblebee* comes on it's time for 'The Green Hornet.

I am Jeff's age and I have a bumblebee in a glass jar. I loosen the cover just a bit, and place my ear next to the lid to listen to her basso profundo buzz.

I set her free. I ride the back of that bee, visit fields of flowers, gather drops of nectar in the sunshine, all the while listening to Jeff Painter play his violin completely unaware of my surroundings. Was ever a creature, an instrument and music so well matched? I snap out of it in time to clap appreciatively. He bows again.

How old do you have to be to be a beekeeper or a violinist? The child prodigy, Yehudi Menhuin, made his *debut* at seven when he was about *two years younger* than Jeffrey. Encourage them to start young. Get their interest early – otherwise there isn't time to master the art. And, in a way, beekeeping is as much as art as playing the violin . although the results aren't always quite as predictable, or even appreciated.

The kid can't wait to show me his violin. It's a beauty. When I heard that Jeffrey had a violin I read up on the subject. The finest violin ever played, the 'Alard', was made by Antonio Stradivari in 1715. Interesting, but what really catches my eye is this sentence at the end of the article in the encyclopedia *"The secret of his varnish, soft in texture and shading, from orange to red, though much debated, has never been discovered."* As I examine Jeff's violin I mention it to him.

"Now you don't suppose he could have used propolis to get that color? I guess we'll never know for sure. But let's check that new book I got for you, just in case."

We look up propolis in the index and sure enough, we find the answer. *"Although most modern beekeepers presently discard propolis as a nuisance, it is of interest to note that Stradivarius and other famous violin makers of old Cremona, Italy used propolis as the principal constituent in their varnish."*

Jeff just laughs, "It sure is funny."

"What's funny about that? You've seen the color of propolis. "

"No not that. It's just that, you know, bees seem to get into everything somehow."

Out of the mouths of babes When you think about it, bees do have a way of cropping up in the oddest places. I don't purposely make these connections between Jeff and the honey bees, but when they occur, it makes everything more meaningful and interesting to him and he remembers. Neither of us knows for sure if the famous 'Stradivarius' used propolis in his varnish or not, and the book never reveals how they discovered his secret but, from now on, every time Jeff picks up his violin to practice scales you can bet he'll think about it. Thinking about it is half the battle.

For Christmas I got him a bee outfit; a yellow hard-hat, yellow rubber kitchen gloves, a bee veil, and one of those disposable paper coveralls that the painters use. I also gave him a CD of the *Flight of the Bumblebee* by Nicolai Rimsky-Korsakov (part of Tsar Saltan, Op. 57 on RCA Silver Seal) and I tell him how I got interested in bees, about the theme song of *The Green Hornet* and we listen to the CD. He didn't want a video game, he said " because I don't have the time and anyway there's more interesting things to do." I'll buy that!

It is mid-February before we get together again. Saturday. Phone rings. It"s Jeff's father, Brian. Would I like to go for a hike in the woods with him and the kids? I bring a lunch and a thermos of coffee in a backpack that is big enough for a tent, sleeping bag and stove. Since I'm going to be out there anyway I figure I might as well pick up some fuel for the smoker.

**"The best kind of fuel is 'punk wood.' The very best comes from windfalls or old rotten stumps that are so far gone you reach in with your bare hands, tear off a chunk and squeeze out a cupful of water just like a sponge."**

The best kind of fuel is 'punk wood.' The very best kind comes from windfalls or old rotten stumps that are so far gone you reach in with your bare hands, tear off a chunk and

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*KID ... Cont. From Pg. 563*

squeeze out a cupful of water just like a sponge. Once you get it dried it makes a cool, long-lasting fuel. I don't know what kind of tree it is. Maybe some kind of cedar but by the time it reaches this state it's hard to tell. We try several before we find one that is just right.

I show Jeff what to look for and right away he starts digging in like a black bear after grubs. He wants to help but there is something about the spongy feel or the leafmould smell of the rotten wood that sends him into a frenzy of activity. He will demolish the whole stump if I don't stop him. To distract him I point out the holes which carpenter ants made before they moved out.

"Did you know that honey bees and ants are related, Jeff?"

"Likes aunts and uncles and green hornets?"

"Smart alec kid." I scowl at him. He kicks dirt at me. "They belong to what scientists call the order of Hymenoptera."

"Like the order of helicoptera ..."

"Hey, that's not bad! Helicoptera! Just means a wing like a helix or a screw so what's the Greek word for wing?"

"What's Greek? Optera?"

"Close. Actually it's pteron." I spell it for him.

"And you say I spell funny."

"No," I said, "*smell funny.*" He kicks me in the shin. I asked for it. I ignore it. "So you see, they classify types of insects by the kind of wings that they have in this case it's a wing that looks like a membrane, which is what hymen means. A wing that looks like it's made out of that plastic shrink-wrap your mom uses to keep food from drying out in the bowl. Actually it includes a large, highly specialized group of insects, including wasps, bees, ants and so on that have a biting or sucking mouth and four membranous wings at least as long as they have wings."

"But ants don't " He stops midsentence and I can see the wheels going 'round. "Oh, yeah! Flying ants! They have wings."

"Right. And you know something else those flying ants are all queens. When they start a new colony or ant hill those wings drop right off. From then on they lay eggs that develop into the workers and soldiers of the new nest."

"Hey, that's neat! Do they have drones, too?"

"And the workers never do have wings. What do you think of that?"

"Neat. But do they have drones?"

"Eat your lunch." Darn kids. You read up on something and they ask you something else. "I don't know."

He gives me the look, "Oh. Okay. I'll ask my teacher. She knows all kinds of things like that."

I'm thinking, "Lots of luck, Ms. Teacher."

When we get back to my place I unload the punk wood into a plastic garbage pail that has a tight fitting lid. By the time I need it it will have dried out a bit, just enough to burn slowly and give off cool, pleasant-smelling smoke. Bees love it.

**"We don't have to wait for spring to get some practice. I can show you how to light your smoker and examine a beehive right now. As a matter of fact it will be better this way. It will be a dry run; you won't have any bees to worry about and you can think about what you have to do."**

Jeff asks if we can finish the frames. I've been thinking about that. It's too cold to put the foundation in the frames. The wax is brittle, breaks apart and crumbles at the first touch when it is cold. Besides that, if we put the foundation in now we will have to wait at least another eight to ten weeks before we can give the new frames to the bees. They can't draw out the comb in the winter. Even if we could put the foundation in the frames now, by the time the bees got to it the foundation would have sagged and warped out of shape. That's no way to make perfect frames. No, it would have to wait.

"I have another idea, Jeff. We don't have to wait for spring to get some practice. Look, I can show you how to light your smoker and examine a beehive right now. As a matter of fact it will be better this way. It will be a dry run; you won't have any bees to worry about and you can think about what you have to do. Then when you get out in the bee yard that will be one less thing for you to learn. Here, take a sheet of this newspaper and I'll take another. Hold it like this at the top corners with your arms spread out like you're flying. Got it?"

"Like this?" He looks like he's going to wrap himself up in it.

"Not quite. Hold it away from yourself. That's it. Now snap your hands apart and it will rip right down the center fold. Good. Now put the two pieces together, one over the other and do it again. Good. Now you've got four equal pieces. Wad each piece into a separate ball." His strips are a bit ragged but good enough. "Now this is the secret of lighting a smoker and keeping it going. Just watch what I do. Never play with matches, or fire or my smoker unless there is a grown-up present. Understand?" He nods. I take a wad of paper, touch it with a lighted match, drop the wad to the bottom and pump the bellows until the paper is engulfed in flames. I do the same with a second wad. Then I add three to four small pieces of punk wood, the third and fourth wads go on top along with a few more pieces of punk wood. I close the spout of the smoker and pump vigorously until thick clouds of white smoke appear. I open the lid, stoke the contents with my hive tool and add as much punk wood as the smoker will hold. Again I pump the bellows until the billowing smoke tells me the wood is burning.

"Vince, I think your smoker is broken."

I check it out but can't see anything wrong. "What do you think is wrong with it?"

"See where the little tube comes out of the bottom of the smoker?" Well it doesn't go all the way to the bellows. It looks like a little piece is missing."

"Oh, yes, I see what you mean now." Kids! They don't miss anything. "No. That's the way they are built. I thought there should be something there too, at first. But if there was a direct connection there, then the fire would be drawn out of the smoker and into the bellows. You wouldn't want that would you? Here's how we will use the smoker when we examine the colonies in the spring." I show him how to puff just a little smoke into the entrance below the three empty hive bodies I have stacked up outside for this little demonstration. I tell him to imagine that this hive is full of bees and we are waiting for the smoke to take effect. I ask him to tell me what is happening inside the hive.

"Well when I'm sitting by the campfire and the wind blows the smoke my way I start coughing and my eyes start to dry and I rub them. Are they rubbing their eyes and crying?"

**"I never thought of that.** Maybe we'll look sometime to see if they do. Beekeepers think the bees smell the smoke and they act as if there was a real fire; they're frightened and get ready to fly away. They need a stomach full of honey before they fly. They line up just like little jet planes at the gas pump getting ready to take on fuel. They suck up honey. We give them time to take up as much honey as they can. They load up in about two minutes we don't do anything to the hive until that time has passed. We get into our coveralls and put on a bee veil and gloves. We take off the top and inner covers." I show him how to take off the top cover and place it at the left side of the hive. I take off the inner cover and place it at the entrance. A wisp of smoke curls out of the top super from between frames.

"Oh. It looks like the hive is on fire."

"Yes, it does. I used too much smoke while I was explaining. You only need two or three light puffs at the entrance. That's enough to get them started eating. Besides if you use too much smoke, what's the honey going to taste like?"

"My dad uses lots of smoke on the salmon and it tastes great!"

"Smoked salmon is great. But, take my word for it, smoked honey is no good. The bees are getting heavy with honey and are so busy sucking up every last drop they don't notice what we are up to. They act as if they had just eaten a big turkey dinner

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"I was so stuffed at Christmas I couldn't move!"

"Yeah. Me too. I felt like having a snooze. Couldn't get enough zzz's. I think the honey bees are like that too. Anyway, somebody found out a long time ago that they don't sting you if you use a *little smoke* and handle them *gently*. Some beekeepers even work bare-handed. Others don't even bother to use a veil. But beekeepers should always wear a veil because a bee sting in the eye can be painful and dangerous as well. You could lose your eyesight. Sometimes a bee will get in under your veil."

"But then you *are* in trouble. You are going to get stung!"

"It's funny but once the bees get inside they change their minds. They feel trapped and immediately want to get back outside again. The little critters forget what they came for. Go a little way from the hive, take off your veil and let them out. The top covers are off and we are working from the back of the colony because we don't want to get in the flight path of the returning bees. Use your imagination. What do you see?"

"I see lots and lots of bees."

"Right. Even early in the spring a strong hive will have lots and lots of bees. That's what we mean when we say we have a strong hive. Look there, between the top bars. There are some bees there that are looking right at us. The other bees are going about their business but these few bees are looking right at us. What are they doing?"

"They are checking us out, I guess."

"They are guards. Guard bees are alert and will sting you if you don't do something. But, what do we do?"

"I think I would smoke 'em."

"Good boy! But not too much and not right in the face. You wouldn't like that either. Just check which way the wind is blowing and smoke *outside the hive on that side* and let the wind take the smoke across the tops of the frames. Wait until those little faces stop looking at you. Here's the smoker. Try it. Begin your examination. Take this hive tool. Remove your first frame not the one next to the side of the hive but the second one in from the side. This is the easiest one to get out. Pry up one side a little, then the other. Put the hive tool down. Smoke the lugs at both ends. Put the smoker down where it won't burn the grass. Pull the frame straight up so that you don't crush any bees. Don't roll the bees between frames or crush them. They'll get frightened and release a smell."

"Does it smell bad?"

"To me it smells something like almonds."

**"Move slowly. Keep your hands and hive tool at the sides of the super. Know what you are doing. Do it slowly and deliberately. The frame is heavy. There are bees on both sides as well as honey and pollen. Examine your first frame. Show me how you do it."**

"Umm. I love almonds."

"That alarm odor tells the other bees to defend the hive and they will sting you. This is one time you won't enjoy smelling almonds! Move slowly. Keep your hands and hive tool at the sides of the super. Know what you are doing. Do it slowly and deliberately. The frame is heavy. There are

*Continued on Next Page*

*KID ... Cont. From Pg. 565*

bees on both sides as well as honey and pollen. Examine your first frame. Show me how you do it."

"I don't know. I guess you take it to the front of the hive so if the bees drop off they can go in. Then you look at the side facing you. Then I suppose you have to lay it down somewhere and turn it over to look at the other side."

"Move around like that and the queen might drop off on the ground under your feet and be crushed. Where would you get a new queen? Keep the frame over the supers. If she falls, she falls inside. Look at the side facing you. To see the other side learn how to move your hands. "

To show him I hold the frame over the super as if examining the near side. Then I raise the frame higher with both hands.

"Lift the frame up. Leave room to lower the left end of this frame. Drop your left hand down so that the end bar of the frame is just above the super, but keep your other hand high. Raise the frame with both hands to make sure there is room to do this. Hold the frame by the lugs, or ears. Swing the bottom bar of the frame away from you. Swing it right around until the other side of the frame faces you. The lower left hand supports the weight as the right hand guides the swing. Stop the swing when the other side of the frame is facing you. Bring your left hand up again so that the frame is level. Lower the frame to a more comfortable position. Examine it."

"But now the frame is upside down . "

"True. But that doesn't matter to the bees. What is important is that now I can see the other side and I didn't have to put the frame down or cross my arms to do so."

"Let me try both hands up . . left hand down . swing away swing the frame all the way 'round . . left hand up . both hands down and look at the frame. Did I do it right?"

"What do you think?"

"Yeah. I got it. But what do I do with it now? Put it back in?"

"Good point. No. We need space to help us get the other frames out. Take the frame we know the queen isn't on it now and put it down at the entrance. Rest one of its lugs on the inner cover . . you see why we put the inner cover there now, it keeps the frame out of the grass lean the other end up against the hive. Examine the next frame. Use the hive tool to lever it toward you into the free space. But, this time, you will have to turn the frame around a second time to make sure that you can put it back in its place. So . both hands up left hand down swing away and all the way around left hand up . and now you can replace the frame."

Jeff imitates my movements. Then he gets carried away and does it by dropping his right hand instead of the left. "Look. It works just as well this way as the way you did it."

"Sure, that's okay. The only reason I said to do it the same way all the time was to make it easier for you to remember. But if you've got it, you've got it! Do it whatever way is easiest for you. Just remember to move slowly when your hands are next to the guard bees on the frames below and you will be alright. Examine all the frames this way. Each frame will be closer to us by one frame than it was originally. When you have examined them all use your hive tool to pry them back into their original location. Leave the one closest to you for last. When this one has been examined and put in its place, pick up the frame from the entrance and put it back in its place. All frames are back in their original locations."

"But what about the other boxes I mean supers?"

"I will show you how you can do this alone even though you are not strong enough to do it as a grownup would. See the top cover on the ground on the left side? Take an empty super and set it on the rim of the telescoping cover."

"Like this?"

"No, not inside. Put it on the rim. Turn it kitty-cornered so it rests on the rim. That's it. Don't crush bees between the bottom bars and the cover. We are using top bee space and there is no room below. Examine each frame. Take it out and place it in the empty super in the same position. Take out the last frame. Lift the empty super off the hive and put it on top of the super beside the hive. Do the same for the next super. Do this until you have an empty super on the bottom board. Take this off and clean or replace the bottom board. Put an empty super on the floor board and put the hive back together frame by frame. A grownup can lift a super full of bees and honey off the colony so you usually won't have to go through this rigmarole as long as a grownup is with you. But someday this method may come in handy.

"Never handle the bees alone at your age. Get some help. Doing it frame by frame is not good beekeeping practice. It is too easy to kill the queen or lose her in the grass. But if your back is sore or you are not strong enough, you have to do it that way."

"But you're going to help me, right?"

"I'll do the heavy lifting but you'll do the real work."

"We will inspect the frames when the weather is warmer in the spring, right?"

"Yes. But what do you inspect for? What questions do you want answered? Beekeepers have to have good reasons for going to all this trouble. Next time I'm going to ask you about brood, from egg to emerging bee. Workers, drones and the queen. So check it out in the book."

"I think the smoker has gone out. I don't see any smoke coming out of the spout."

I give the bellows a short pump and a thin grey wisp curls up. "Still good for another hour yet . . but I don't think I am. You hungry?"

"I'm always hungry."

"Good. So am I. Let's go eat!" BC

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*Vincent Doyle is a beekeeper, free lance writer and adamant supporter of teaching kids what's 'right.*

# Carolina Winter

mike hood & stephen bambara

Offering management advice is dangerous business. If we over-generalize many questions go unanswered, but if we get too specific, information may be misleading to those for whom it does not apply. With that said, following are some guidelines for an average hobbyist or small operation beekeeper under normal but unpredictable Carolina conditions. With just a bit of thought this information can be adapted by beekeepers outside this region.

Your particular goals in beekeeping may effect wintering management practices. So, the first consideration should be to define those. Management practices differ between beekeepers who tend bees for extracted honey production, comb honey production, colony increase and so forth. Adaptations to these guidelines may need to be made to accommodate different goals. Generally, the following suggestions should help any beekeeper seeking to have his or her bees survive the winter months and emerge strong and healthy to make a honey crop next season.

Carolina winters run roughly from December through February. There can be wide temperature swings during the pre- and post-winter periods though, that can give 80°F temperatures or snow in November or March. The rest of the year is characterized by a strong spring honey flow dominated by tulip poplar, followed by an unfortunate shortage of nectar plants during the summer (except for a temperamental sourwood flow in some areas), and finally, a moderate fall flow from mixed sources. Mountainous regions tend to perform more like the northeastern states, and the coastal areas of the Carolinas have many characteristics of some states farther south. One factor which seems consistent with much of the rest of the country is that the lowest point in the brood cycle is November, when the least amount of brood can be found in the hive.

## EQUIPMENT

At some point in the fall when the size of the brood nest is shrinking and before bees need to cluster (about October), the winterizing process should begin. Repair or replace any hive bodies which no longer fit properly, have large gaps at the corners, or just generally do not give protection from the weather. Replace rotten or "spongy" bottom boards, broken or weak frames and frames with poorly constructed comb. Keep your best combs in the center slots. If you used a queen excluder during the honeyflow, remove it now. A convenient place to store it is under the outer cover. This gives extra air space increasing ventilation and reducing condensation problems inside the hive. If the queen excluder remains in place between hive bodies it could prohibit the queen or the cluster from properly moving upward to the stored honey. Extra supers should be removed and protected from wax moths.

Entrance reducers can be used but do *not* use the smallest hole. A reduced entrance decreases the area which needs to be protected and decreases the amount of breeze which can blow into the opening. The narrow hole tends to discourage mice, but you may choose to use hardware cloth to keep mice out. Also, the higher off the ground the hive is, the fewer mice problems encountered. The use of upper entrances during the winter is a matter of personal style but they are generally not recommended in this region. And certainly, hive insulation is unnecessary in the Carolinas.

As a matter of course, hives should never be allowed to sit directly on the ground. This reduces the life of the bottom board and can create moisture problems inside. Rather, they should be placed on stands out of danger of flood waters, especially in the coastal areas. Colony entrances should face south or southeast to avoid chilling winds and receive morning sun, and hives should also be protected by some type of windbreak to reduce the impact of prevailing cold winds and weather. Avoid low-lying areas where cold air settles and warming will be delayed until later in the day.

Ventilation is important. You can use a pebble or nail under a corner of the top cover to prevent an air-tight fit. This crack allows warm, moist air generated by the colony to rise and escape preventing condensation on the underside of the cover. This is a good practice especially if you ever find condensation under the cover on a cold-day inspection. The gap should be about 3/8" at one (the highest) corner. Any greater could allow robbing. If you use inner covers turn them so the deep side is up, allowing the greater air space between the inner and outer cover.

## FOOD

The amount of honey to leave a colony varies, but the very least would be a full medium (6 5/8") super, with about 35 lbs. of honey. Any left in the brood chamber is a bonus. The best way to feed colonies low in stores is to add some from stronger colonies. But if you don't have any, you'll need to feed. Lift the back end of the colony to develop a feel for its weight so you can use this technique to estimate honey stores in the future. If the colony feels like it is nailed down, at first, that's probably a good sign. But if it is light and feels as though it could be knocked over it may be short on honey. Double check your 'hefting' estimate with what's actually, really inside until you are familiar with the weight vs. honey amount ratio. If you overestimate, your bees could die.

The best time to do this is before the last fall nectar plants, such as aster and goldenrod have completely stopped blooming. Watch and learn the blooming period of these plants in your area. Aster honey granulates quickly and may do so while still in the comb. This makes it less desirable for overwintering because the bees must be able to collect water to dissolve the crystals, so avoid leaving a colony with only aster honey on which to overwinter. Feeding at this time takes advantage of the colony's collection and storage behavior as it prepares for cooler temperatures. If you wait too long the 2:1 (sugar:water) sugar syrup may not be incorporated fast enough and it could conflict with the

*Make sure you remove your queen excluders during fall inspection.*

bee's need to slow down its natural cycle for the winter. The feeding period should be heavy and short rather than light and extended.

You can feed sugar syrup with any feeder that does not entice outside bee activity and robbing. Entrance feeders are not recommended and are better used as summertime watering devices. Syrup should be thick. Fill a container to a little more than half with sugar, then add warm tap water almost to the top. Stir until the water dissolves all the sugar it can hold. A common formula is 2:1, sugar:water by weight. It works and is easy to prepare. Remember, robbing may be a serious threat at this time of year so take precautions such as feeding late in the day and being careful not to spill or use leaking feeders.

## BEES

The condition of the bees is certainly important for good fall prep. The queen should be producing a good, but reducing brood pattern now, and have produced productive and gentle offspring, along with any of the other qualities you desire. Check for spotty brood patterns, the presence, even in small amounts of the common diseases (AFB, EFB, Chalk and the like), and the overall 'population.' This last feature can be difficult to access, especially for inexperienced beekeepers, but with time you'll know if you have 'enough' bees, or 'not enough' bees to overwinter well.

Requeening is generally recommended every two years in this part of the country. Though most prefer earlier in the year, requeening in late September or early October during the fall honeyflow is a common practice in the Carolinas. A colony with an inferior queen will be an inferior colony come spring.

Extra care must be taken to insure acceptance since there may not be a second chance if the queen is rejected this late in the season. If you use a regular queen shipping cage for introduction, remove the attendant bees. Leave both corks in for one or two days when you introduce the cage. Then check to see if workers are feeding the queen through the screen or biting the wire. If there is no aggressive wire biting, pull the cork on the candy end. These extra days improve acceptance rates during hot weather and late season requeening. Feed sugar syrup while introducing a new queen. Again, do not incite robbing as this could reduce acceptance.

The strength or population size of the colony is also important at this time of year. Do not try to nurse a weak colony

*Continued on Next Page*

*Inspect brood nests for health – healthy queen, healthy bees, healthy brood.*

*Menthol works fairly well for tracheal mite control because of the warmer weather common to the Carolinas.*

***CAROLINA ... Cont. From Pg. 569***

through the winter. Though you may be successful, you will end up with a weak colony in the spring that won't be able to take advantage of the spring flow. If you have other colonies, add brood or bees to strengthen the weak one. If necessary, combine it with another. You can always split it back out next year if it is strong. A minimum level of strength is approximately a deep brood chamber packed and/or overflowing with workers. Combining weak colonies may, however, not be as beneficial as once thought because of the problems associated with mites. Joining a weak, mite infested colony with one not infested is probably detrimental to the stronger colony. Care must be taken, extra care actually, to be certain 'why' the weaker colony is in the condition it is in.

## DISEASES & MITES

Fall can be a critical time in disease treatment for a hive. If American foulbrood has threatened your hives in the past, a fall preventive treatment is generally recommended. Terramycin® patties are generally preferred in the fall, although many beekeepers will use a dust formulation. Do not feed Terramycin® mixed in sugar syrup.

Nosema is common in the southeast, but it is hard to generalize recommendations. If you have had higher than average overwintering losses in the past not attributable to other causes, it may be worth treating with Fumadil B® as a preventative. Checking for Nosema is fairly easy. Capture several workers on the landing board in a jar. Grasp a live bee by the thorax between thumb and forefinger. Using a fine-pointed forceps remove the head cleanly at the base. Turn the bee around and grasp the very end of the abdomen and pull straight out. This removes the midgut. If clean it should be tan with constrictions, if infected it will be bloated and white. You could also have your bees examined by a laboratory (such as the USDA bee lab in Beltsville, MD) for the presence of Nosema disease to be certain.

Tracheal mites (Acarapis woodi) have caused thousands of colonies to die over the winter in the Carolinas during the past several years. Hives may not show any obvious evidence of tracheal mites and the only reliable method of detection is by microscopic examination. Bees walking in a hive with unhooked wings forming a "K" position are often infested with tracheal mites, but this symptom need not be present. Monitoring tracheal mite infestation levels is labor intensive and time consuming. One known fact is that mite populations build during the fall. The presence of these mites in a colony does not mean automatic death so the decision of whether to treat or not is a difficult one. Probably most beekeepers feel it is necessary to treat their hives regardless of the mite level.

Consider using a strain of bee which is less susceptible to this mite but be alert to false claims by breeders. Treatment with menthol crystals may be required. For menthol to be effective, temperatures above 70°F for at least two weeks are needed, so don't wait too late in the year. This could be August in the mountains or October in the southeastern region. By the time mite symptoms are obvious, it is often too late to use menthol. Packet placement may vary depending on your area and the strength of the colony. Normally, it is placed on the top bars above the brood nest. But, if the colony is populous or the daytime temperature is 85°F or greater, the packet should be placed on the bottom board in the back third of the colony. Remember, menthol vaporizes and is heavier than air. High temperatures inside the colony caused by hot weather or crowded conditions will result in excessive menthol vaporization which will run the bees out of the hive. Every location and every colony in the Carolinas is different so you need to make good observations to determine the best placement of the menthol packet. Feeding cough drops to bees is a waste of time and money unless THEY have a cough.

A recent research study indicates good tracheal mite control when infested colonies are exposed to the sugar/oil patties year-round. Results look good and recommendations should be available soon.

*Varroa* mites (*Varroa jacobsoni*) have moved into the Carolinas to the extent that most beehives probably now have them. Currently, the only miticide available in the U.S. for Varroa mite control is fluvalinate (Apistan®) strips. If you are unsure of whether your colony is infested, examine the capped brood (especially drone) carefully. Look for pinhead sized brown mites on the white pupae and also look in the cells. Use fluvalinate strips with a sticky board for detection purposes, or try the ether-roll method. A clear treatment threshold has not been determined, but if there are any mites detected by ether-roll, or more

than a few found by a fluvalinate strip and sticky board, then treatment is recommended immediately. November is a good month to treat for Varroa mites since brood rearing is at a minimum. Leave the strips in for the maximum number of days allowed by the label, remove, and dispose of the strips properly. Always review the label prior to use and follow label directions closely. Never use a pesticide without a label that does not state your specific intended use.

As with many other states, the Carolinas have state supported bee inspection services. Contact your state department of agriculture or landgrant university for information about these services.

## PESTS

Some regions of the Carolinas do not have cold enough periods to destroy all wax moths. Wax moths are often wrongly accused of killing a colony because a strong colony can defend itself against wax moth attack. The greater threat is against unguarded or stored equipment containing older comb. If freezer space is available, freeze combs overnight. You may also use para-dichlorobenzene crystals, but store combs tightly in a ventilated place and thoroughly air out before use. Read the label instructions carefully first.

Skunks can also be common winter pests in certain areas scratching on the fronts of hives and eating bees as they come out to respond. Placing colonies on stands 18 inches or higher will often eliminate the problem.

Some beekeepers have reported losing colonies to the red imported fire ant in the coastal and southern regions. Select yard sites free of fire ant mounds or treat mounds individually with an approved pesticide. Soapy water poured on mounds has also proved effective in controlling ant mounds.

## Winter Food

Red maple and alder provide nectar and pollen in most areas of the Carolinas beginning in mid-January along the coast to mid-March in the mountains.

Carolina jessamine, often referred to as yellow jessamine, is the South Carolina state flower. Carolina jessamine is a vine that has beautiful yellow flowers that are reported to be toxic to bees. This plant blooms in the coastal area in mid February and early March in the central part of the state. Beekeepers report severe bee losses when bees forage on Carolina jessamine, but entire colonies are not killed, normally. Some beekeepers say that only when other preferred plants fail to produce nectar and pollen will the bees work this plant. The pollen is suspected to be poisonous to foraging bees. Beekeepers should try to avoid areas where Carolina jessamine grows abundantly.

## FOLLOW UP

Check your bees on any warm day during the winter. Look for condensation on the inside of the top cover. Move frames of honey closer to the cluster if they are separated by empty frames. Move up any honey that may be below the cluster. Look for bees with unhooked ("K") wings which might indicate tracheal mites. Look at the bottom board for excessive numbers of dead bees or on the ground outside hive for crawling weak bees. You do not need to pull frames from the center of the cluster.

In summary, your goal is to have a strong, healthy colony in the spring. To accomplish this you must start with a strong, healthy colony in the fall, supply them with a good home, plenty to eat, and they will do the rest. BC

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*Mike Hood is Chief Apiary Inspector and Apicultural Extension Specialist for the State of South Carolina, located at Clemson University. Stephen Bambara is an Apicultural Specialist at the University of North Carolina located at Raleigh.*

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# Next Spring, Let's Do A WORKSHOP

dick bonney

Several questionscrop up at beekeeper meetings these days. How can we get more members? How can we have more interesting meetings? What can we do that is new and different? Well – how about sponsoring a new and different workshop or field day?

Many organizations sponsor hive openings. They go to a member's yard, open a hive or two, and demonstrate and discuss what they find. Often this is coupled with a meeting or an annual picnic. There is a certain amount of learning to be gained at a hive opening, but there is also a certain amount of chance involved. Often the site is chosen because the host is amenable, and though there may be hives there to look at, we may have questions about the condition of those hives, about the timing in the season, and whether there was something for experienced beekeepers. I believe firmly in summer meetings that involve a hive opening. However, I think we can go a step further.

A particular workshop that I have done in the past is called "A Day in the Beeyard." It is one that needs a fair amount of preparation and although we are not likely to be working in the beeyard for a few months, this is a good time to do some planning. It is not an event that can be put together on the spur of the moment.

At this day in the beeyard several specific things can be demonstrated. It can actually take all day, perhaps combined with some static displays and non-hive activities, or it can take less time and concentrate on hive activities only. I would plan on at least a half day, though, and keep in mind that each individual demonstration will take longer than you first expect.

I run this kind of workshop or demonstration in the early season. June is a good time for the events that follow here. As you will see, each needs some preparation, and the amount of prep time varies. To run such a workshop means that a bee yard must be available to accommodate whatever number of people you expect, with an owner willing to have a little inconvenience both on the day of the event as well as for some time before. Perhaps two or three experienced beekeepers can cooperate to set it all up.

First, an obvious demonstration is one of opening and inspecting an overwintered hive. This is especially appropriate if there is a large proportion of novices in the group. It is best if the hive is in good condition, and one in which you can expect to find a little of everything. The demonstration can start with selecting smoker fuel and lighting the smoker, then go through specific techniques of disassembling a hive, with commentary on what to look for, what things look like, and handling the bees. My own experience shows that there are really two parts to this; how to open and inspect, and what is being seen. By how to inspect I mean how to light the smoker, how to apply smoke, how to remove covers, how to remove frames, and on and on. What is seen is something else; eggs, larvae, capped brood, capped honey, evidence of mites or disease, all those things it is so helpful to be shown. Both aspects are important. More experienced

*Try to have both good and poor examples to show. For instance, some beekeepers may not recognize the difference between a good and a poor brood pattern until they are shown.*

*Take the opportunity to display some less common equipment such as this ventilating screen and front porch combination used for moving a hive or confining a colony.*

beekeepers may become impatient with this demonstration, so consider having a dual demonstration with something more advanced happening on the other side of the beeyard—perhaps making comb honey. We'll come to that in a moment.

Another demonstration that is especially helpful to beginners is to have a hive set up that was started from a package earlier in the season, and perhaps another that was started from a nucleus. This gives an opportunity for people to compare the progress of these demonstration hives with their own hives at home. It can be difficult for novices to judge if their hives are doing well if the judgment is based strictly on reading or listening to other beekeepers talk. Viewing a good example can do wonders. With any such hive, it helps to have simple records available. When was the hive set up? If the second hive body is in place, when was it added? Was it all foundation, or was there some drawn comb? How much has it been fed?

Then, how about a demonstration of hiving a swarm? It's surprising how many beekeepers have never done this or even seen it done. They aren't sure how to go about it if they do get a call. You can't be sure a natural swarm will be available at the right time for this demonstration so set one up.

To begin, find a used package bee container in good condition. If you don't have one, some beekeeper acquaintance must have saved one. Plan to have bees in the package for at least a couple of days, and be prepared to feed accordingly. Next, order a queen. Then, several days before your planned event and with the queen in hand, shake two or three pounds of bees into the package. (Make a temporary funnel from a large sheet of poster board.) If you want a really impressive swarm, use more bees. They can be taken from several hives so as not to set any one hive back at this important time of the season. Add the caged queen, and put on the feeder. Be sure they have plenty of feed during their confinement so you will have a mellow swarm to work with. Now put the package away in a cool quiet place until a few hours before the workshop.

On the day of the workshop, get the package out and find a good place for your swarm to cluster. This is an idealized demonstration so make it easy. (You know, three or four feet off the ground in an unobstructed situation where you can put a hive or other container directly underneath. One shake and you have them.) To set up the swarm, remove the caged queen from the package and tie that cage to your selected cluster point. Leave the open package nearby and very quickly the bees will move out and join the queen. You now have your swarm. Later, bring the group to it and demonstrate the hiving technique (without releasing the queen). Although most natural swarms will be nowhere near this easy, this setup gives plenty of talking points and works well as a demonstration. Later, perhaps you will choose to raffle this new colony, or give it as a door prize.

Another demonstration, also requiring advanced preparation, is a colony set up for making comb honey. The individual who sets it up should be knowledgeable about comb honey production and have a good strong colony going, preferably with some sections already completed. With this colony set up and working you have the opportunity to discuss aspects of hive configuration such as number of hive bodies, number and kind of supers, use of a queen excluder and ventilation, all important points for producing comb honey. Perhaps you will have more than one kind of comb super on the hive (or have more than one hive set up) so you can demonstrate the equipment used for round section, square section and cut comb production.

Another strong colony could be available to demonstrate how to make a split. Here again a new queen should be available, and the hive should have an ample supply of brood, honey, pollen and adult bees. This demonstration is an excellent opportunity to show that a colony is not split by simply taking one hive body off and putting it on a new stand without regard to the specific contents. The technique of equalizing brood, stores and adult bees in each half of the split can be shown and explained, as can the benefits of giving them a new queen rather than causing this new colony to wait for three or four weeks while a new queen is raised and becomes productive.

*Continued on Next Page*

*WORKSHOP ... Continued From Page 573*

A related demonstration involves making up a nucleus hive, with the associated discussion of the advantages this manipulation has in swarm control and the subsequent uses that can be made of a nuc. For instance, use it to raise a new queen, or sell it, or keep it as a resource during the rest of the season. A hive not quite strong enough to split often is strong enough to give three or four frames to start a nucleus.

Two-queen systems always draw interest. If someone is available who is especially knowledgeable about these, have one set up. Since there are variations of the two-queen idea, if your group is really ambitious you could have more than one of these set up to demonstrate alternatives.

Throughout the day, have mini-demonstrations. For instance, some new beekeepers don't know about the frame lifter style of hive tool. (Not the frame grip. That's something else.) Be sure that at least one demonstrator is using a frame lifter. Have a queen catcher (the little clamshell device) on hand and show how to use it if you come across a queen. On one or more of the hives have a slatted rack, and queen excluders, both wood and metal bound. Discuss the uses of these along with the pro's and con's.

My own approach to a workshop of this type has been to keep things sequential, so that everyone can view everything if they choose. If two demonstrations are going on at one time, make them non-competitive. That is, have a beginner level and an advanced level going at once perhaps, but not two for beginners or two advanced at the same time. One of the reasons for this is that it's difficult to run this day as a round robin. Several of these demonstrations can only be done once — making a split or hiving a swarm, for instance. Some of the other activities may upset the colonies involved to a degree that you can't readily open them again that day. You do want to be working with mellow bees.

Okay, are you ready to try this? A word of caution. If you try to do every one of the demonstrations mentioned above during the same workshop, you will have a very full day, especially if you take time for refreshment breaks and lunch. For your first time, a selected set of demonstrations would be best. It is probably best to limit attendance somewhat, too. That is, do this at the local level. Set up a day for your local club rather than for a larger state organization, for instance. Perhaps later you can become more ambitious and do it on the larger level, but have the experience first. BC

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*Dick Bonney is the Extension Apiculturist for the state of Massachusetts and the author of two books on beekeeping.*


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How They Do It In Delaware

# TRAINING BOY SCOUTS

dewey caron

Boy Scout merit badges cover a wide variety of subjects. Beekeeping, and topics like masonry, rifle shooting, first aid and insect study are some of the badge areas. They are designed to expose scouts to a wide range of experiences and help them develop reasoning skills.

Like most states, Maryland needs more young beekeepers. We continually try to interest 4-Hers, scouts and other youngsters to attend and participate in our meetings. We offer a $1 annual dues benefit for youth (vs. $10 normal dues) but like other associations we still have to few younger members.

In order to earn a Merit Badge in beekeeping, a scout must fulfill the requirements as outlined in the Boy Scout Handbook. (See Sidebar on requirements) Beekeeping Merit badge work, like all of the others, requires physical work, learning and knowing how the subject relates to the world. Since normally the Beekeeping Merit badge is only tried by a few youngsters, we thought that instead of teaching the normal beekeeping short course, the Delaware Beekeepers would assist Boy Scouts with the Beekeeping Merit Badge this past spring.

We started by contacting the scout masters in the regional scout counsel with a proposal. For our training, we provided a regular troop meeting night workshop on fundamentals of the hive which included hive and frame assembly and then organized a day-long bee "camp" for those scouts who participated in the first workshop. The day-long course included live bee manipulation, honey extracting, discussions on diseases/pests and seasonal management. The scouts prepared in advance or at the conclusion of "camp" day an essay on bee pollination.

**Initial Workshop** The objective of our initial workshop to be held in January or February, was to have the scouts become familiar with bee space, frames and the hive. They assembled both frames and hive bodies. State Association beekeeper volunteers helped the scouts with the tools and discussed parts of the hive with them. We realized afterward that we should also have assembled the remainder of the major pieces of equipment for discussion at this initial meeting. Our objective was for the scouts to understand bee space and how frames and hive bodies are used in modern beekeeping.

Our impression of this initial workshop was that the scouts were eager participants in frame assembly. We had to monitor their use of glue to keep it being spread all over in their enthusiasm. Older scouts assisted the younger ones on proper use of hammers and electric drills.

Since we needed lots of frames and boxes for the workshops, we asked a large-scale Delaware beekeeper to donate unassembled frames and hive bodies for the scout workshops. We returned the (mostly) correctly assembled frames and hive boxes to him. He found the work to be top quality and wondered when we would do this again so he could order more unassembled equipment.

**Super Saturday** The core of the boy scout experience was a full day of instruction and experiences with bees. This activity was coordinated by the executive committee of the state association and carried out by members who volunteered their time. There was plenty of work and volunteers to go around.

The day started by assembling the scouts in the auditorium of a new building built for cooperative extension activities at Delaware State University. This facility is conveniently located in Dover in the middle of the state. Scout masters, moms and senior scout leaders were responsible for finding transportation to and from the site for the scouts who participated. The group consisted of over 80 scouts and their leaders.

We began the program with a video about bees and beekeeping. We used the Penn State video "Why Honey Bees." The importance of properly constructed and as-

*Continued on Next Page*

*Dr. Dewey Caron shows two scouts what goes on inside a regular hive using a small observation hive.*

# Beekeeping Merit Badge Requirements

1. Study a hive of bees. Remove the combs. Find the queen. Figure the amount of the brood and the number of queen cells. Figure the amount of honey in the hive.

2. Show the differences among the drones, workers, eggs, larvae, and pupae at different stages. Tell the differences among honey, wax, pollen, and propolis. Tell how bees make honey. Tell where wax comes from. Explain the part played in the life of the hive by the queen, the drones, and the workers.

3. Hive a swarm or divide at least one colony. Explain how a hive is made.

4. Put foundation in sections or frames. Fill supers with frames or sections. Take off filled supers from the hive. Fix the honey for market.

5. Write in not more than 200 words how and why the honey bee is used in pollinating farm crops. Name five crops in your area pollinated by honey bees.

***BOY SCOUTS ... Cont. From Pg. 575***

sembled frames and hive bodies was next reviewed along with the basics of a hive and bee equipment.

After this general session, we divided the scouts in five groups by giving out pieces of color fabric to attach to their uniforms. We kept scouts in their troops, so the leaders could serve to keep the boys attentive. This arrangement also allowed the leaders to learn alongside their scouts and thus they would be better prepared for follow-up questions.

The five topics we covered with 40 minute sessions each were:
Diseases and enemies of bees
Management of bees through the year
Extracting and processing honey
Biology of the honey bee
Opening and manipulating the beehive

Each of the presentations was organized to enable the scouts to see, hear and experience apiculture. The scouts turned the handle of the extractor, they smoked the bees using the smoker, they got to see the honey stomach in the bee model and to view a hive supered for nectar flow. Each group had 12-18 boys so each could easily see and touch and also ask questions.

Sessions lasted 45 minutes. Each presentation attempted to cover basic material and then responded to questions from scouts. They were an eager and attentive group, well motivated and a pleasure to work with according to the presenters. They asked some detailed questions and there were virtually no discipline problems. After each of the sessions "Blue cards" for each of the scouts were signed indicating completion of that activity.

One issue we addressed was what if a scout felt that he had an allergy to bee stings. We didn't tell them they couldn't participate. Instead we gave them information about bee sting allergies. Far fewer individuals have allergies than they believe but their belief (or the belief of their parents that they did) was a good opportunity to teach about bee stings and allergies. We encouraged each scout to have his allergy "confirmed" so they could be certain and then consider desensitization.

With some 80-90 individuals (mostly youngsters), participating, we were concerned about the possibility of a medical emergency so we planned in advance. We had a nurse in attendance and a designated beekeeper volunteer prepared to assist with emergency transportation if necessary. We did not have to use either.

For the live bee workshop, we planned for two contingencies. We moved colonies during full flight from their apiary to our teaching site two days before our Saturday workshop. This meant leaving the field force behind (with catcher hives so the foragers wouldn't be lost). At the teaching site, we used an isolated area behind a fence as a temporary apiary location. This was adjacent to an equipment shed that had an overhang. Since the day started out raining, the overhang was welcome – none of the scouts got wet. The colonies – of varying strength – were still generally small in size as it was early in the spring and, with all foragers left behind back at the original site, the colonies were gentle and easy to inspect.

Following the presentations the scouts were given time to prepare an essay of up to 200 words on the importance of pollination. Some had completed this part of the requirement for the merit badge prior to coming to the Saturday session. The beekeeping merit badge booklet provides details to help the scouts with this requirement and presentations during the day covered the pollination topic as appropriate.

At the end of the day, we had Delaware secretary of agriculture, Jack Tarburton, an Eagle scout, present completed "blue cards" to the scouts who participated. The completed "blue cards" are next sent to regional headquarters of the Boy Scouts of America organization where completion of all requirements will be verified. Individual scouts who participated in the training will receive their badges in typical ceremonies in their individual troop.

*Three proud scouts demonstrate what they've learned.*

## What did we learn?

This was a learning experience for the Delaware Beekeepers Association. It takes good organization and dedicated beekeepers to conduct this type of training session. We hope we have interested some young scouts in becoming beekeepers. We know we have taught them something about bees and beekeeping they didn't know.

We do not know if there will be a need for such a program each year. The participants with two participating scout masters have arranged to get together to review the program. Some suggestions are likely to involve changes. We recognize that each scout needs more opportunity to manipulate bee colonies. We have invited Delaware beekeepers to have scouts help and observe them as they manage bee colonies and extract honey this fall. The scouts will receive a free subscription of *Bee Culture* magazine later this year and will get our beekeeping newsletter *Newsy Bee* to supply information on state and county bee meetings. We will encourage them to join the association.

We collected the essays and identified the best of them following the workshop. Those scouts preparing the best essays were invited to assist the Delaware beekeepers at our display during the State Fair week. We arranged for the Secretary of Agriculture to present the scouts with the best essays who had completed the merit badge with a certificate and award from the State Association.

We also had our fair scout volunteers attend one day of the annual EAS meeting in Lancaster, PA prior to their day at the fair. This helped continue their education and better prepare them to answer questions from fairgoers. At EAS they were 'drafted' to help Cliff Sunflower perform his 'whole audience' work shop on Kids and Bees.

*Scouts and their leader show what they've learned to Jack Tarburton, DE Sec. of Ag., himself an Eagle Scout.*

In the fall, the state beekeepers association participates in a series of activities at the Delaware Agricultural Museum and we plan to ask scouts receiving the merit badge to volunteer to answer questions and discuss beekeeping. We feel the message of beekeeping can be effectively conveyed by our young beekeeping merit badge scouts. It helps in their further education and development as beekeepers as it provides to the general public the messages of youth and relevance of beekeeping.

We in Delaware are very positive about our experience. Young people have many activities and busy lives. By going to them and working with an established program like the Boy Scout merit badge, we can better get youth involved in what we do. We won't make all of them beekeepers but we feel we have helped them, and they in turn will help us spread the word. BC

# HOW TO START A SCOUT PROGRAM

1. Contact a scoutmaster in your area, ascertain whom the "District Scouting Executive" is and determine the geographical area of your local district.
2. Decide whether it's feasible to help the boys in your district, county, or carry out a statewide program. In Delaware we worked a Statewide program, working with five District Executives.
3. Meet with local scouting district executive(s). Be sure to ascertain days to hold prerequisite workshops and a final day to hold your "merit badge day" that does not conflict with events planned by local council(s). Be sure to obtain a list of scoutmasters and their phone numbers. This will be helpful as you develop your program. (Few Scoutmasters will call, you will likely have to call them.)
4. A definite must: Meet with your Beekeeping Association Executive committee to outline resources available to you, (ie. instructors, physical locations to hold workshops). Use the Merit Badge Handbook as a guide, in Delaware we shot for a well rounded program, going well beyond the scope of the requirements listed in the merit badge handbook.
5. Contact your extension office, state apiarist(s). Master beekeepers, and others in your area who are familiar with training. Most will be glad to assist.
6. With an outlined proposal, attend scoutmaster roundtable(s) for an announcement, input and suggestions.
7. A week to 10 days prior to your "badge day" call local media and announce your activity. This includes TV stations as well as local and statewide newspapers.
8. If you attract over 50 scouts, call a local politician's office and invite one to attend. They love the publicity and it will help attract local media if a secretary of agriculture, senator, or perhaps even governor will attend for presentation of the "blue cards"

Tips: Be positive and upbeat with whom ever you talk to. Everyone likes a winning program, and with a positive approach you will attract more attention. I had to do a lot of "pushing" to get the ball rolling, but once started, it snowballed almost out of control. Be careful it does not roll too far, or you will have a landslide of scouts, and will not be able to maintain a quality program. If necessary, put a cap on the number you will work with, with a promise of perhaps doing it again.

# HOME HARMONY

ann harman

## *Tea, What A Remarkable Beverage!*

Tea can be served steaming hot or icy cold. It can be strong or mild, robust or soothing. You can serve it straight, with lemon or milk or flavored with fruits or spices. Serve it at any time of day or night or use it in recipes. Tea as a beverage has been part of civilization for so long – over 4,000 years – that we pay little attention to its influence. We casually ask for a teaspoon when we mean an ordinary, not-too-large spoon. Our recipes call for a "teaspoon of ". We say "teacup" and "teakettle" even when we are not making tea.

Tea is universal and touches all ages. Two nations – Great Britain and Japan – have ritual and ceremony involving tea. Our history books describe the colonists' objections to taxation with their Boston Tea Party. And who can forget the famous Mad Hatter's Tea Party in *Alice in Wonderland?* Children recite the nursery rhyme "Polly, put the kettle on, We'll all have tea." Around the turn of the century British poet Rupert Brooke questioned "Oh! Yet stands the church clock at ten to three? And is there honey still for tea?"

The story of tea is another one of those "However was it discovered?" tales. Possibly the true story is lost in the far distant past but the Chinese legend of the discovery is both delightful and plausible. It seems that in the year 2737 BC (The Chinese seem quite certain of the year!) Emperor Shen Nung was boiling water over a fire made with branches of a nearby tree. Some of the leaves fell into his pot. Intrigued with the delightful aroma, he sampled the hot liquid and found it delicious. Not to be outdone, the people of India have a tea-discovery legend. About 1900 years ago a Buddhist priest planned to honor Buddha by spending seven years without sleep while thinking only of Buddha. Since seven years without sleep is quite difficult (some might say impossible), Darma, the priest, became sleepy. Determined to stay awake he snatched some leaves from a nearby bush and ate them. Of course the leaves were from a tea bush and he was instantly refreshed. Thus, by nibbling on the leaves he stayed awake for seven years and achieved his goal. No matter what the origin of tea as a beverage, the fact remains that it has been appreciated for a very long time.

Tea has had a long and fascinating history. Our first written reference is actually from AD 350 when a Chinese scholar wrote about a medicinal drink made by boiling the tea leaves. By about AD 600, tea was an important item in Chinese commerce. Around this time tea entered into the social structure and the blending of different tea leaves gave the elite some very special beverages. As the cultivation of tea spread, the beverages entered into the culture of Japan but it was to take several hundred years before tea-drinking spread to the common people of the tea-growing regions.

However, Europeans were not introduced to tea until the Dutch brought it back from their commerce with the Far East in the early 1600s. By the mid-1600s Britain, France, Germany, Holland, Scandinavia, Russia and America were all enjoying tea. But the beverage was still used for medicinal purposes as well as for pleasure. Some people put salt on the leaves and ate them with butter! (No, you will not find a recipe for that in this article!)

At this time tea was available in limited quantities and the price was astronomical! The British were paying six to 10 British pounds for one pound of tea. Here in America tea was $30 to $50 a pound! It took the British to seize control of the tea trade from the Dutch and increase imports greatly; then tea became available – at a reasonable price – to all and the famous "coffee houses" sprang up. Although named "coffee" (since this drink preceded tea) the coffee houses were cafés where anyone could enjoy a cup of coffee or tea or cocoa. Tea quickly became the most popular of the three drinks.

Tea has had its share of governmental attention. Since the coffee houses of Britain were replacing the taverns, the government was not receiving tax money from the sale of wines and liquors. So King Charles II shut down the coffee houses in 1675 and proclaimed that selling tea was an act of sedition! Fortunately the tea, coffee and chocolate dealers protested and forced the King to cancel his edict. His wife, Queen Catherine, did not help his cause one bit since she was an enthusiastic tea drinker.

About a century later tea again attracted royal attention. In America the colonists were being forced to pay three pence a pound tax on their tea, imported from England. From 1768 to 1772, the colonists imported nearly two million pounds of tea. That did bring in quite a nice revenue for Great Britain. That tax, along with others, was not popular with the colonists and led to the famous Boston Tea Party in 1773. In some ways tea was responsible for triggering the Revolutionary War.

Up to 1904 tea was a hot drink, made with boiling water and served very hot. It took a typical steamy summer's day to introduce people to iced tea. At the Louisiana Purchase Exposition in St. Louis, Missouri, a booth, manned by an Englishman from India and several men from Ceylon, attempted to sell hot tea to

*Continued on Next Page*

*HOME ... Cont. From Pg. 579*

the fairgoers. But in the sweltering weather the crowds passed by the hot tea booth and headed for iced drinks at other booths. And so the tea salesmen poured tea over ice cubes and sold this. An instant success! And iced tea remains so today with about 37 billion servings annually.

In that same year the tea bag appeared. Thomas Sullivan, a tea and coffee merchant in New York, sent samples of his tea varieties in little silk bags to prospective customers. Soon the orders that came to his warehouse were for tea packaged in the little bags instead of for loose tea leaves. About 68% of the over 200 million pounds of tea consumed in the U.S. today is in the form of tea bags.

Today tea is grown throughout the world. However, the best tea-growing land is mountainous areas with mild climates, rich soil and abundant rainfall. Although tea will grow in hot, low country, the best tea is produced in higher altitudes with cooler weather. Today most of America's tea comes from India, Indonesia, Sri Lanka, Kenya, Malawi and Tanzania. Tea is also grown in China, Taiwan, Japan, Turkey, Bangladesh and several South American countries.

The tea plant is an evergreen, related to our camellias. To obtain seed selected plants are allowed to grow into trees up to 20 feet tall. The flowers are small, white and sweet-smelling – and are pollinated by insects. The resulting seed is then used to plant new fields. So the honey bee is indeed important to the growing of tea. Tea plants are kept pruned to stay from two to five feet for easy picking. The bud and two tender leaves can be harvested every seven to 14 days. Even with all this pruning and picking a tea "bush" will live 40 to 100 years.

Let us follow a freshly picked tea leaf to its destination – your teacup. Usually the leaves are processed at the tea plantation. The freshly picked leaves are "withered" either in air or by forced heated air. The leaf becomes soft and flexible. Next the leaf goes to the rolling machinery where the leaf is twisted and rolled to break up the cells within the leaf. The leaves also change color and begin to smell like the tea leaves we buy. Now the fermentation or oxidation process can begin. The rolled leaves are spread thinly on racks or on cement floors in a cool, dry atmosphere and left for about 20 to 60 minutes. Here the leaves turn a bright copper color. For green tea, this oxidation process is omitted. The oxidation process must be stopped quickly so the leaves now enter the firing or drying room. The leaves are spread on trays and move from the top to the bottom of the machinery while a blast of hot dry air is forced over the leaves. The four pounds of freshly picked leaves has been reduced to one pound of dried leaves. The leaves are then placed into aluminum-lined, moisture-proof, plywood chests for shipping around the world.

Although 3,000 varieties of teas are now available, they fall into three basic groups. *Green tea* is not given the oxidizing step but is rolled and dried. *Oolong tea* is only given a semi-oxidation or fermentation and those leaves will be a greenish-brown. *Black tea*, the most popular in the U.S., has been fully oxidized. Each area of the tea-growing countries produces specialty teas, sold either straight or blended. Tea may be sold loose, in bags, powdered instant, and ready-to-drink in cans or bottles.

One item of interest: Orange Pekoe tea is a size of leaf, NOT a flavor, color or indication of quality. The terms "Pekoe" "Souchong" "Fannings" and "Fines" are used to indicate the size of black tea leaves. Orange Pekoe refers to long, thin, wiry leaves.

Some teas are suitable for breakfast. For a pleasant wake-up call, try English Breakfast or Assam. Some teas gently invigorate us in the afternoon – Darjeeling or Earl Grey. Some make an excellent bedtime drink – Formosa Fouchong with its delicate scent of gardenia or jasmine. The tea known as Black Dragon is excellent with fresh fruit desserts. Teas with spices or flavorings added can be enjoyed any time of day. Many of these are excellent as a refreshing iced tea. Experiment with some of the teas available to discover your favorite.

## Tea Sangria

Now that we have a pot of tea made – by your favorite method – let's see how tea and honey can give us some delicious beverages.

4 cups boiling water
5 tea bags – your choice
2 cups sliced fresh fruit (any combination of apples, peaches, pineapple, oranges or strawberries)
2 tablespoons honey
2 cups white grape juice

In teapot, pour boiling water over tea bags; cover and brew five minutes. Remove tea bags and cool. In large pitcher, combine fruit with honey. Pour tea over fruit and stir in juice. Serve in ice-filled glasses. Makes 6 10 oz. servings.

*Tea Council of the USA, Inc.*

## Icy Fruit Tea

Concentrate:

4 tea bags (experiment with different teas)
1 cup boiling water
1/2 cup honey
1/4 cup crushed packed fresh mint leaves
1 cup orange juice
3/4 cup pineapple juice
1/4 cup fresh lime juice

Mixer:

Ice cubes
1-1/2 quarts carbonated water

For concentrate, place tea bags in medium bowl. Add boiling water and steep 10 minutes. Remove tea bags. Add honey and mint, mix well. Mix fruit juices in 1-quart container. Add tea mixture and refrigerate until ready to use.

For tea, fill 12-ounce glass with ice cubes. Add 1/2 cup tea concentrate and fill glass with carbonated water. Garnish with a pineapple spear and mint sprig. Makes 6 servings.

*Sweetened With Honey The Natural Way*
National Honey Board

## Grapefruit Tea Cooler

This next recipe is so refreshing you will want a pitcher of it in your refrigerator during the hot summer.

8 tea bags
2 cups water
1 cup honey
2 quarts ice water
1/2 cup lime juice
2 6-ounce cans frozen concentrated grapefruit juice, thawed, undiluted

Place the tea bags in a large bowl or tall pitcher. Bring the water to a boil; pour over the tea bags and allow them to steep for 5 minutes. Remove the tea bags and add honey, stirring until dissolved. Add the remaining ingredients and blend thoroughly. Serve over crushed ice in tall glasses. Makes 12 cups.

*The Book of Honey*
Claude Francis & Fernande Gontier

## Russian Tea

Although this next recipe makes quite a large quantity, it is a wonderful substitute for hot cider or other hot drinks on a chilly winter's day.

1 box stick cinnamon (1-1/4 ounces)
1 box whole cloves (1-1/4 ounces)
3/4 cup honey
3 oranges: juice of 3 and grated rind of 1
6 lemons: juice of 6 and grated rind of 1
1/3 cup black tea leaves
5 quarts boiling water

Cook spices, honey and grated rind with 2 cups water for 10 minutes. Let stand 1 hour. Strain. Steep tea in the boiling water for 1 minute. Then add fruit juice and spice mixture. Serve hot. Makes 45 cups.

*Good & Wholesome Honey Recipes*
American Honey Institute

After you discover different teas and experiment with recipes by using different flavors, you just might agree with the author Sidney Smith who lived from 1717 to 1845. His comment was: "Thank God for tea! What would the world do without tea? How did it exist? I am glad I was not born before tea." BC


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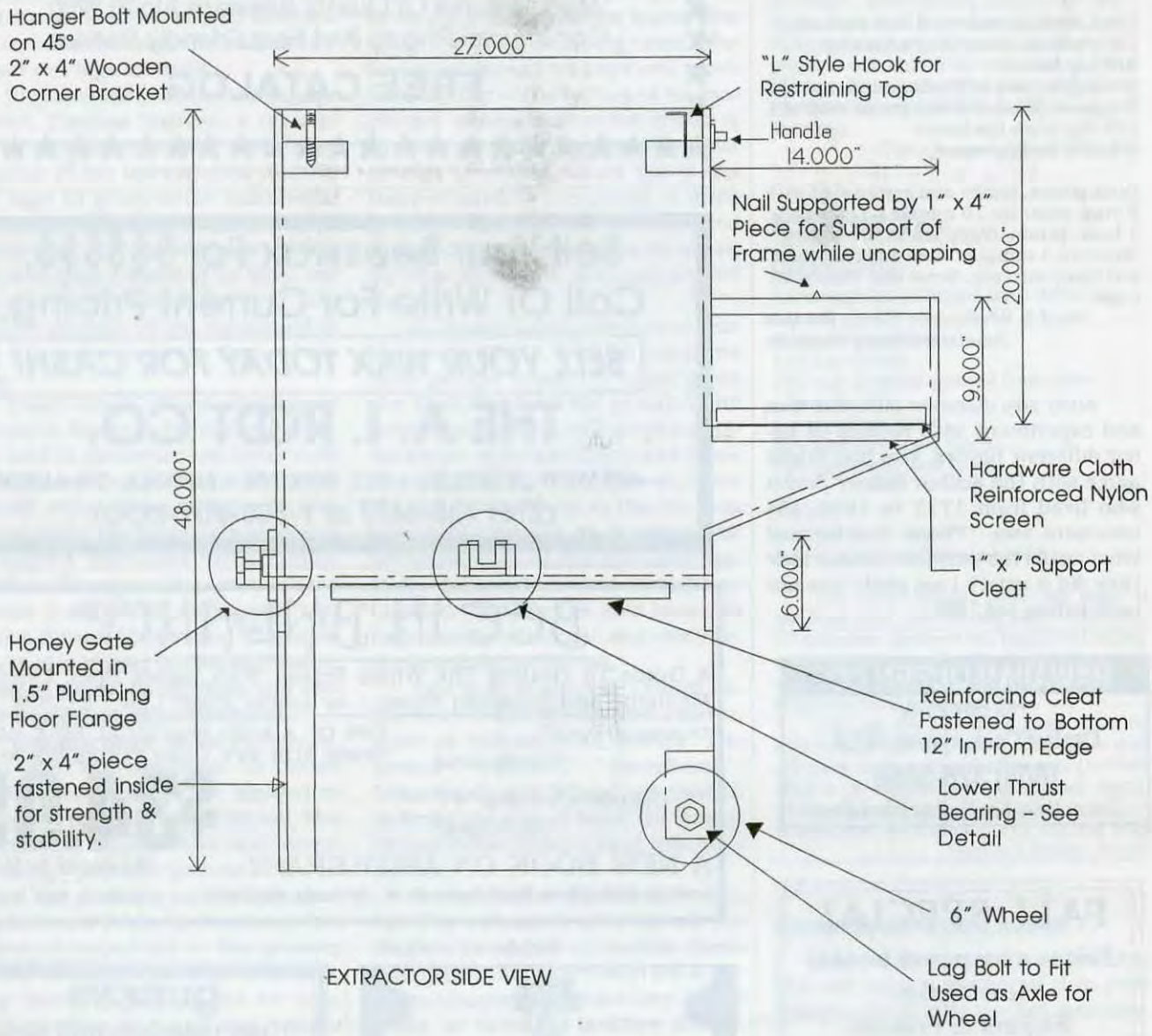
# BUILD A RADIAL EXTRACTOR

thomas darby




EXTRACTOR SIDE VIEW

As a hobbyist with a few hives, I couldn't justify buying one of the commercial extractors on the market so I designed and built two extractors at (relatively) low cost that have proven quite satisfactory. I extract twice a year in my kitchen, and I can easily extract and bottle the collected honey from my three hives in one day. My earliest attempt was a basket extractor fitted for four shallow frames. After eight years of use its condition deteriorated and I decided to replace it. Several improvements were made over the older, simpler design. The current design:

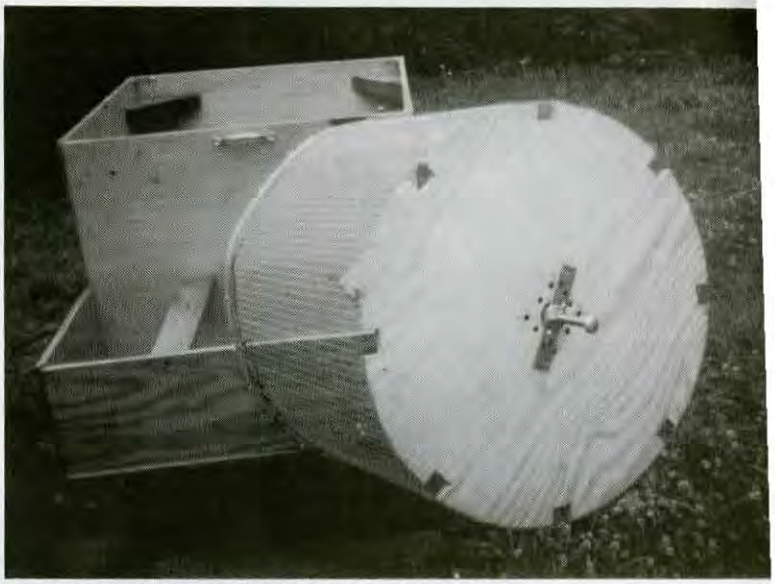
(1) Accommodates full depth as well as the shallow frames.

(2) Has a built in uncapping tray that drains directly into the extractor, thereby eliminating the need for extra equipment.

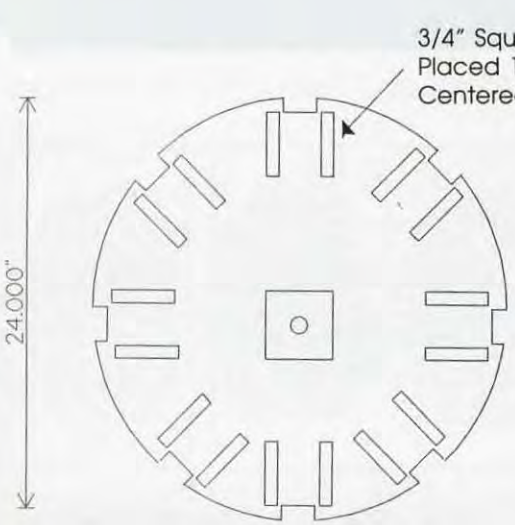
This extractor has a capacity of eight shallow frames, or up to four deep frames and four shallow frames, and was built for under $100. It is powered by a half-inch electric drill, which is not included in the cost, since this can be considered a normal household tool. The drill that I use was a relatively inexpensive $50 model, but it has some real muscle, which is essential. Light duty drills will overheat.First I tried using a three eighths inch drill, but I it rotated too fast, and overheated. A half-inch drill rotation speed of between 500 and 600 RPM is satisfactory without reduction.

This restricts the width of the extractor to a size which can fit through a doorway. The extractor has two wheels for easy transportation. I used some that had come off a superannuated lawn mower, but similar ones can be purchased if required. They don't have to be fancy, but

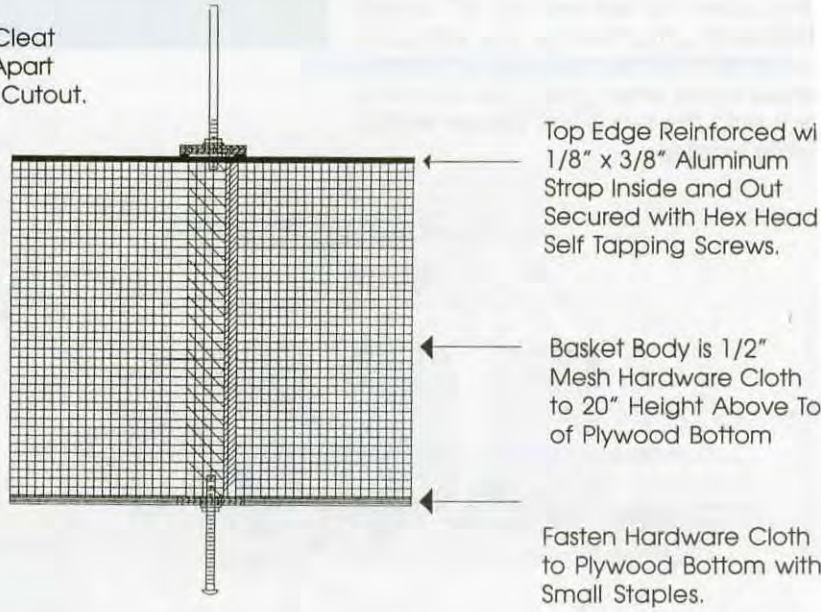
*Detail of basket showing bottom supports and spindle top.*



*Bottom of basket showing bolt and support.*




BASKET TOP VIEW




BASKET SIDE VIEW

the larger the better. Mine are six inches in diameter. With the wheels, the extractor is easily moved by one person. Without, it is movable by two people, but is too cumbersome to be practical. Two people are necessary for the extracting operation, as there is sufficient vibration while rotating the basket to make single operator operation impractical. (In my first version of this extractor, I placed the wheels on the outside, and this made the width about three quarters of an inch too wide. Moving the wheels inside cured this, and actually made the structure somewhat stronger.)

Construction should be a relatively straight forward project if a router is available. Fitted, routed joints are needed to assure leak free-joints. (In my first extractor, I had some small leaks that I was able to seal using melted beeswax. The grooved joints of the new extractor cured this, and also created a very sound structure.) This was easily accomplished using half-inch plywood and a corresponding router bit; three-quarter inch plywood would be better, but it will significantly increase the cost, and I found the narrower stock satisfactory. Half inch stock is the smallest that should be used however since there is substantial stress on the structure during rotation of the basket with full frames. By being careful, this extractor can be constructed from two sheets of ½ inch plywood. I was not quite that careful, and so I needed three sheets. One eight foot 2 x 4 will be required, as well as a 27" piece of 2" x 6" for the support of the wheels. (These wheels are mounted slightly above the bottom of the extractor. When extracting, the wheels do not touch the ground, thereby contributing to stability while the basket is rotating. Cutting the lower rear edges of the extractor at 45° allows the extractor to be moved using the wheels. This is clearly shown in the diagrams.) The spindle is made of 1" x 4" lumber and its construction, too, is clearly shown in the diagrams. Some scrap lumber is re-

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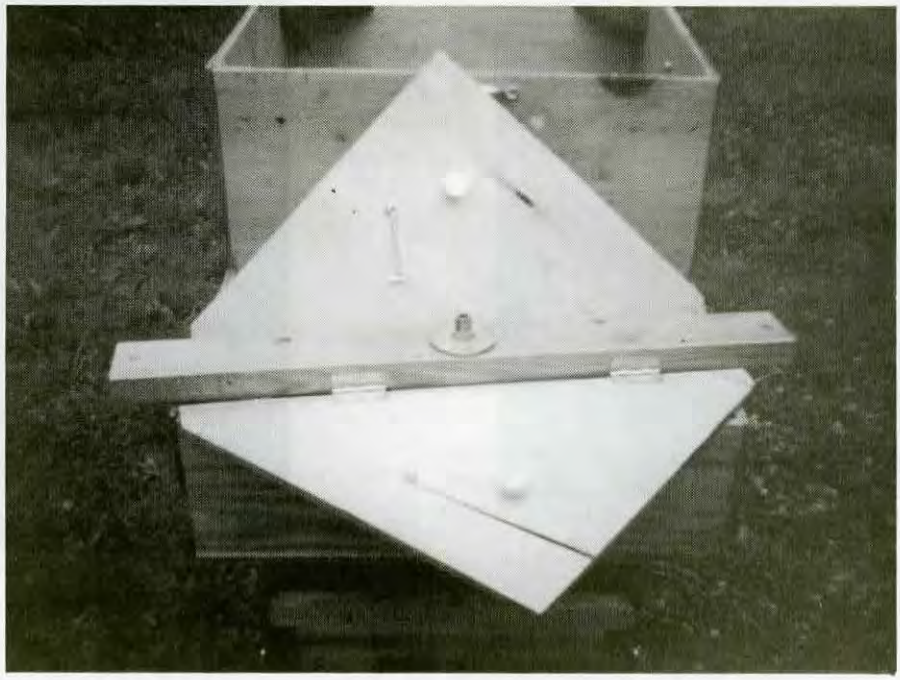
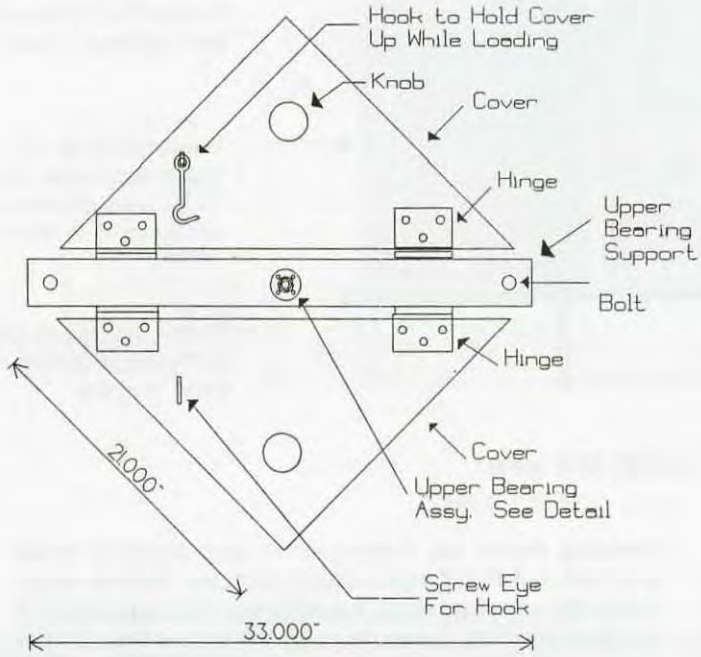
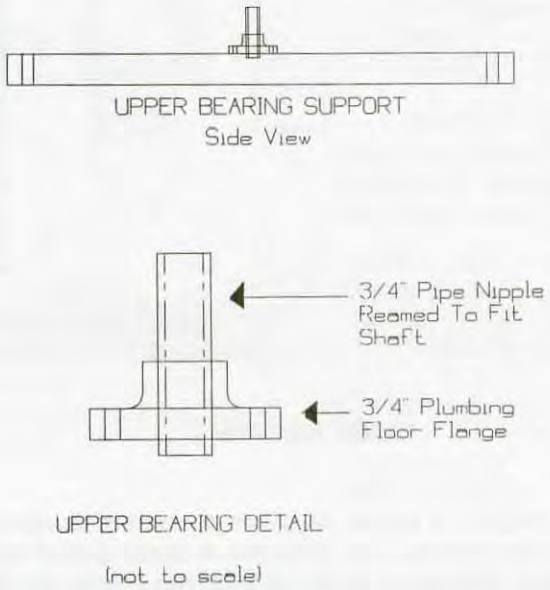


*Top with knobs, hinges, hook and center support.*

Note:

Cover is loose fitting. It only serves as a spray shield while the basket is rotating. The outer corners rest on 45° corner brackets attached to the Extractor body, and are restrained by "L" shaped screw hooks when down. The hook and eye hold the two cover pieces vertical while loading.



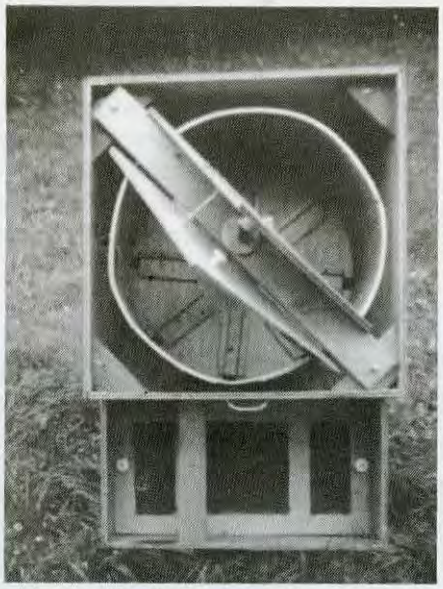




quired for cleats on the bottom of the basket. Any dimension will do as long as the pieces fit, and they are all the same size (for balance). Do not place the cleats so that the frames fit tightly; a ¼ inch clearance is about right. I secured the cleats with hot melt glue.

The only hardware required consists of:

- Two half inch carriage bolts with two nuts for each (the round head variety is required to make the thrust bearing on the bottom of the basket).
- Two pieces of steel strap material for securing them to the spindle. I purchased these from the local hardware store, but any corrosion-protected eighth inch thick strap would do.
- A suitable plumbing floor flange with a short pipe nipple for the upper bearing. This nipple will need to be reamed to size to fit the upper carriage bolt, used as a spindle. I had this done by a friend who had the requisite metal working equipment, but it should not be expensive if requested of a commercial machine

*Top view of basket support with covor supports and bottom bearing.*

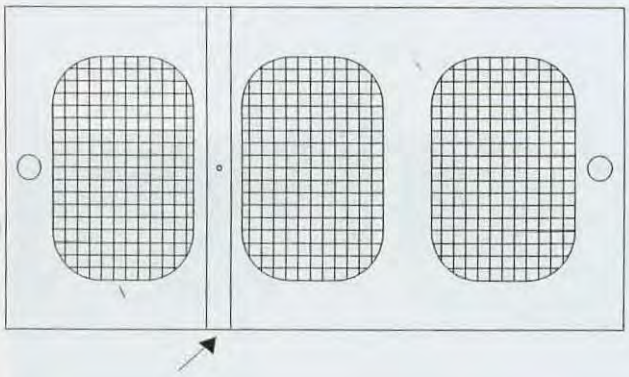


*Top view, basket and cover in place.*

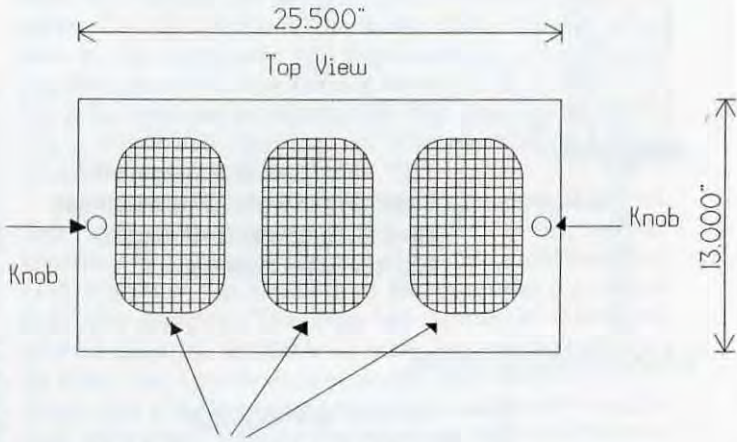
Hardware Cloth Supported Nylon Screen

Side View

Top View of Extractor Uncapping Section



1" x 4" Support for nail driven through with point extending about 1/2" for support of lower edge of frame while uncapping. This is mounted at the top of the uncapping section of the extractor. The screen shown is at the bottom of this section (See extractor side view for location.)

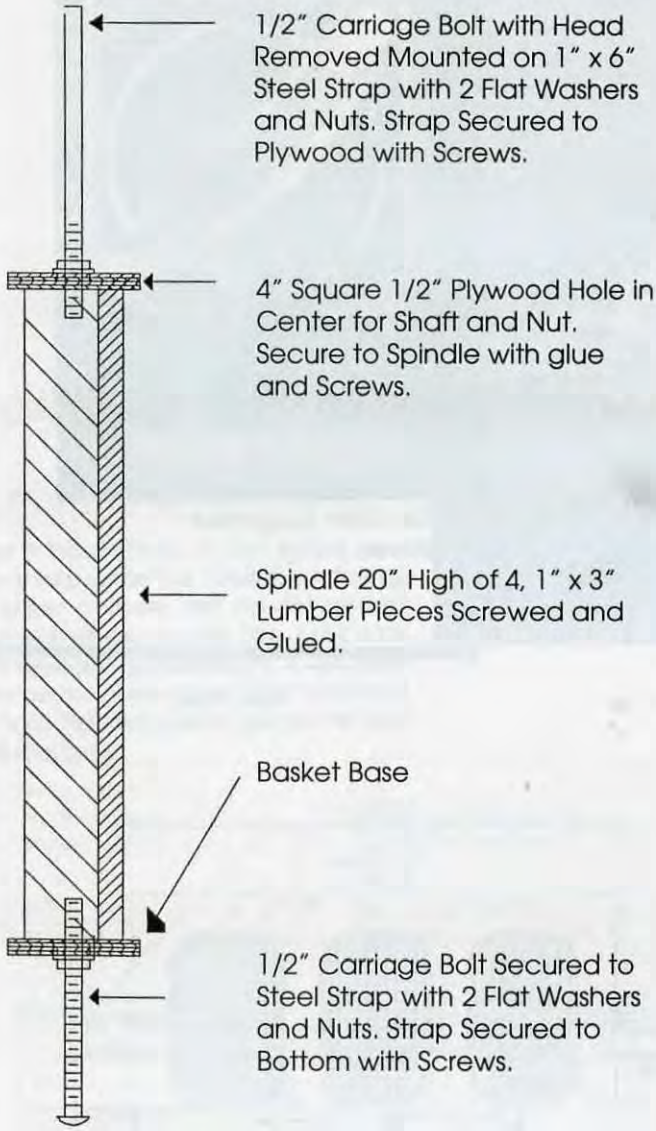



Hardware Cloth Wrapped With Nylon Screening Between 2 Pieces of 1/2" Plywood

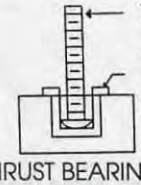
shop. The upper carriage bolt must be smooth sided, not threaded all the way, and the head is cut off.

- A pipe cap large enough to accommodate the head of the lower carriage bolt completes the lower thrust bearing. I attached this pipe cap to the center of the bottom of the extractor by drilling a force-fit sized hole into a square piece of 2" x 4" stock, and then fastening this using sheet rock screws.
- A standard honey gate with a matching 1½" plumbing floor flange takes care of draining honey from the extractor. A plastic gate has proven quite satisfactory.
- All screw joints were made with sheet rock screws of appropriate length since they are self-taping without the necessity of drilling pilot holes. Screw-reinforced joints are used throughout the spindle construction for added strength.
- The uncapping section uses nylon window screening that is supported by ½ inch mesh hardware cloth.
- Eight small angle brackets were used for reinforcing the corners.
- A long screw hook and eye are used to hold up the lid pieces while loading.
- Four small drawer pull-type knobs are used, two on the frame holding the screen in the uncapping section, and two on the top lid pieces.

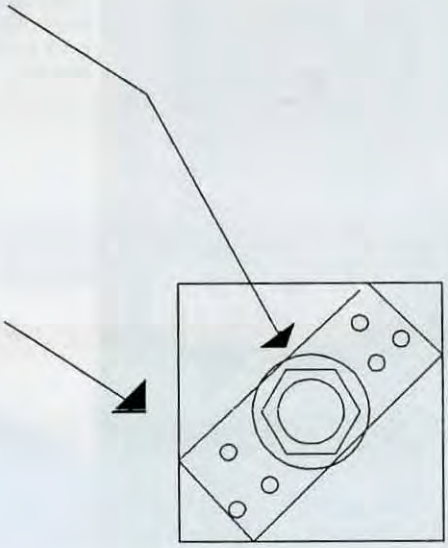
*Continued on Next Page*




BASKET SPINDLE DETAIL




LOWER THRUST BEARING DETAIL



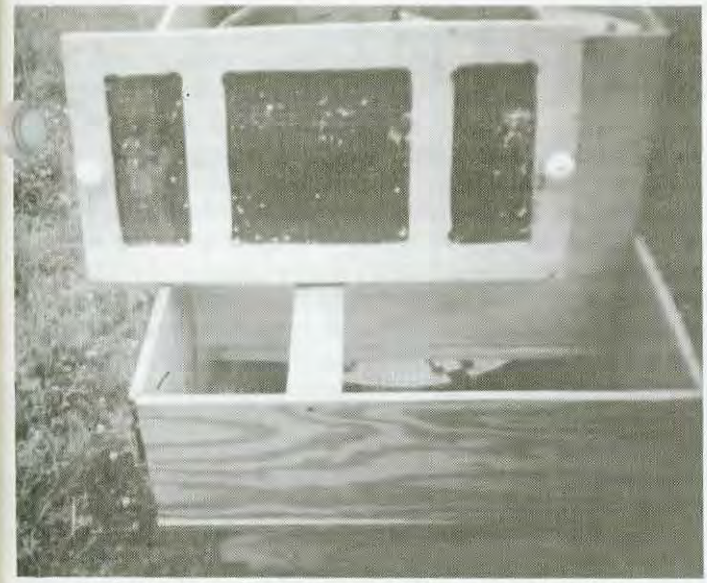
Top View of Spindle Cap. Bottom is Secured in an Identical Manner.

*Cover up with basket inplace.*

- A large screen door-type handle is attached to be used as a handle when moving the extractor.
- Half inch mesh hardware cloth is used as the periphery (outside) of the basket, and this is reinforced by two pieces of half inch wide, eighth inch thick aluminum at the top. These pieces were attached using three eighths inch long hex head self-tapping screws. (The points protruding through the material were filed off easily.)
- Two three eighths inch hanger bolts were used for securing the upper bearing support.
- Two L-shaped screw hooks are used to hold down the top pieces while extracting.
- Four strap hinges secure the top to the upper bearing support.

Construction should be straight forward, following the accompanying diagrams. A good grade white glue was used in all joints, with the small reinforcing angles used at the top of the extractor, and on the inside just below the bottom. As shown in the diagrams, two reinforcing braces are attached to the underside of the bottom for stiffening. Similarly, 45° brackets made of 2" x 4" inch stock are used at the four top corners. Two of these have the hanger bolts inserted, and serve as the supports for the upper bearing support. The other two serve as supports for the top in its lowered position.

The top was deliberately made with a half inch clearance at the edges, and it serves the purpose of eliminat-



*Detail of uncapping screen with knobs resting on cross bar with protruding nail.*

*Thomas E. Darby and his home made extractor*

ing a spray of honey coming out the top. As noted above and shown in the diagrams, two L-type screw hooks keep these pieces down while rotating the basket.

Some care is required in constructing the basket. Balance of the empty basket is not critical, but reasonable effort should be made to keep the balance within small limits. Alignment of the top and bottom carriage bolts to the center of the spindle *is* crucial, however I had slight misalignment along the axis (the upper spindle is slightly tilted from the center axis). This did not prove crucial, and was easily compensated by leaving the screws securing the upper bearing flange slightly loose. If this equipment were used more frequently, I would fix this, but it has proven to be adequate for the twice-a-year use

*Wheels and axel for easy moving.*

that I give it. Significant misalignment of the spindles resulting in cocking of the basket or radial misalignment of the basket affecting balance is of course unacceptable. Reinforcing the top of the basket using the aluminum pieces requires many clamps. I lapped the inner and outer ends by starting the process with the outer piece end located at the middle of the inner piece. Careful attention to the circularity and concentricity of the basket top is required while attaching these two pieces. Be sure the pilot holes are sized properly. The sheet metal screws are so small that they can not take overtorquing if the pilot holes are too small.

I chose a clear urethane varnish for finishing the wood, and I applied three coats. (The number of coats was determined by the size of the can of varnish purchased, but I feel that any less would have the potential for premature deterioration.) The final coat should be a food approved material, available at most bee supply outlets. I do leave the extractor open in the bee yard for two to three days after extracting to recycle the honey clinging to it. After that, I remove the cappings, and melt them in a solar melter. This reduces the mess in the cappings melter from honey.

All dimensions given are those for my installation and home. Care should be taken to assure that the extractor will fit through any doors that may be required, and appropriate adjustments to the dimensions made to assure that the equipment is useful in your home. The small pipe flange that I used is now hard to get in my locality. (The one that I am using came off my old extractor.) Pipe flanges make a natural anchor for this top bearing, and you may have to improvise if you can not get the right size. (A piece of bar stock threaded to fit a larger size flange, and drilled with the appropriate size center hole would be one solution to this problem.) In any event, the materials available locally will dictate the specifics of the design. Mine works, but the material list was created to suit the local supply situation. If it is different for you, consult your local hardware dealer – that's what I did.

*Thomas E. Darby, Jr. is a hobby beekeeper and master designer living in Poquoson, VA. This is his first published article.*

# Of Bees & Things

old timer

The whole outdoors is filled with an incredible volume of flying snow particles, sharp as sand, so with a deep breath of relief and stinging faces we close the door on such pandemonium. Coming into the heated (almost too hot) hushed interior is like entering another world. Removing my outside clothes I walk over to the kitchen table to turn up the wick on the lamp while my wife moves the kettle a little closer to the center of the stovetop. The water begins to bubble almost instantly – there's nothing like wood heat, to my mind. The lamp smokes a little so I turn the wick back down slightly.

In such a soothing and restful environment one can think and just simply unwind – as if there's anything to unwind from, out here on our backwoods farm. Faintly, through the log walls we perceive the storm's uncommon fury and it is comforting to know that the stable with the old cow and calf, three goats, 25 chickens, two cats and a dog are snug and warm in their log structure – well chinked and banked with manure on the outside to a height of about five feet. By now our beehives will be indistinguishable in the white deluge. With the oven door open the stove really kicks out the heat and now and then a knot flares whitely, hissing and giving a short, sharp squeal.

As you've gathered from the above, this isn't exactly Hotel New York – but to us it's everything.

Sipping tea, my gaze across the table takes in my wife – head down over a notebook and pen flying – and I marvel anew that everything she does is so methodical. Right now before retiring, she records this storm in detail.

Knowing how meticulous she is, it's easy for me to understand her complete dedication with – as she calls it – her Super Diary, a collection of those ruled exercise school books in which she enters *every* notable item (even some seemingly unimportant data) hereabouts.

She must have been born that way because she's recorded stuff from as far back as I can recall – starting with just after we were married when she wrote reams on children, animals, plants, bees, weather, and on and on. She chronicles trifles with the same fervor as the more eventful occurrences – her mother did the same with scraps of yarn, buttons, pieces of cloth and I do with stones, strange-shaped wood, burls and feathers.

We often pick out a 'year book' and become engrossed in its content – most of which we had forgotten. Just to give you some indication of their scope I'll dig into the pile right now while my wife looks on quizzically and pours fresh tea.

Here we are: notes herein transferred from jottings scribbled at my high-country apiary – Parsons Mountain.

1st July 1978 – HOT – Bees working like mad on berry blooms.

2nd July 1978 – HOT – Some clouds - bees working like mad on berry blooms.

3rd July 1978 – HOT – Fireweed just starting. An inch strip of wax I moulded into the top and bottom of each frame in third super of hive with feather, has now been completely waxed in. Green aphids cover me each time I disturb an alder bush.

4th July 1978 – Very hot – Bees working like mad.

5th July 1978 – Very hot, breezy – Bees working like mad.

6th July 1978 – Very hot, cloudy – Bees working like mad.

7th July 1978 – Very hot, cloudy – Bees working like mad.

8th July 1978 – Very hot. All the green aphids on alder bushes being gobbled up by small bright-colored lady-bugs (lady-beetles) and bigger brown lady-bugs. Mule deer prevalent – browsing in early morning – not disturbed much by my rising from bedroll and getting breakfast fire

started. Plenty of dandelions for the bees (and me).

9th July 1978 – HOT – Removed a frame of partly-capped honey and put it in that big jar you sent along with the milk (I washed it in the creek) and put wet frame back for the bees to clean up and refill.

10th July 1978 – HOT – Some clouds - I found this day a most colorful flower two inches high growing from a crack on a most desolate and forbidding rocky ledge. The only other signs of plant life on this 10 by 30 foot strip were three strands of coarse grass in another fissure about three feet away – a patch of brownish-green lichen on the vertical wall. This brings me to conjecture that nature if left alone will grow something everywhere, even on sheet rock. How this little bloom got here – considering I'm up very high – been climbing since early morning and it must be nearly noon – is something I will probably ponder in my dreams for it is a mystery. And the more I think about this bright, courageous little plant surviving in such an unlikely place the more intriguing it becomes. A few days later I again visited this place to convince myself that it wasn't a dream. But it was real all right and as I sat on my heel a little breeze from the cold heights above ruffled its tiny yellow petals as though mocking me.

In my opinion every man should spend some time alone in the wilderness.

10th Aug. 1978 – HOT – There are now the most delicious low-bush, black-raspberries by the ton, on slopes. Also wild rhubarb (bear food) salmon berries and blueberries.

This narrative continues in the same vein but not to bore you with any more weather I'll just mention one more item.

15th Aug. 1978 – A black bear somehow – incredibly – fell of a ledge 20' above me when I was picking raspberries and landed on its back with a loud 'woof', just missing me. I also ended upon my back with a tea-pail full of berries over my head. I don't know who was the more startled but when I got to my feet, also with alacrity – old slewfoot was 50' away – gaining speed and making a beeline for parts unknown, heedless of entangling thorny bushes.

A violent gust outside makes itself felt as I open another book:

16th March 1984 – To see if a certain hen (which acted funny) was really broody – we put several marks on an egg and left it under her. However, we were proven wrong for she left the nest soon after laying an egg – but we left the egg anyway (just in case) removing all the other fresh-laid eggs every day. What a surprise I (my wife is recording this) got one day when I reached under several hens to get the eggs as usual, and brought out a fluffy yellow chick (peeping like mad) as well.

Apparently, the warmth of all the hens in the nest all day – and even the night (for some preferred a nest box to a roost) was enough to incubate the egg and – don't think this phenomenon ends there – believe it or not, the hen from under which the chick was found took over as mother (some instinctive quality must have triggered the parenthood urge) even though she was still laying eggs. A classic case of nature adapting to accommodate a bizarre situation.

It pulled at the heart-strings to see this lonely little ball of down trailing behind 'Mummy' out in the yard, in

all weathers.

Another violent gust makes itself felt here in the kitchen – it really isn't a fit night out there for man or beast, and shortly (since we arise long before the sun does) the missus and I will be warm and cozy under eiderdown quilts – lulled by the storm's 'soothing' murmur. However, before I stick this rather spontaneous missive in an envelope to *Bee Culture* (as I expect my son any day) – one last paragraph. Once I get going on this sort of thing I don't know when to stop.

June 12th 1991 – The old cow was not at the stable door as is customary at chore time this morning and hurrying back through the field to an alder and willow patch – there she was – with a new-born calf; mother and baby doing fine. There's never an end – tomorrow is another day. BC

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*The 'Old Timer' writes from and calls British Columbia home.*


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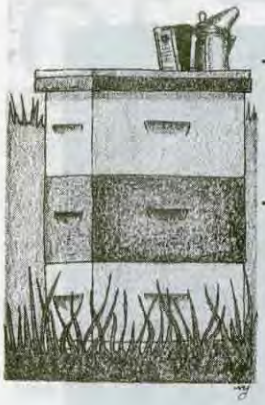

# BEE TALK

richard taylor

*"The joys of beekeeping are not measured in dollars, nor in the size of your apiaries."*

To me, few joys compare with that of finding my supers filled, right to the corners, with beautiful white comb honey Twenty years ago I got 50¢ each for the round ones; now it is five times that. But the joy does not lie in that. It is in the sheer sight of the product, complete, perfectly finished off. Part of the rejoicing is in my astonishment, for I never really expect this result so fast. I should have learned, long since, that a strong colony of bees fills a super with amazing speed in a good honey flow, but still, I never really expect it.

It comes, then, as a bit of a surprise to read that beekeeping has lately been on a decline. That is of course true if you measure it in numbers of colonies from year to year. I think I read that the numbers have gone from 115,000 to about 50,000 in my state over the last several years. But that says nothing with respect to the kind of joy in beekeeping of which I was just speaking. Happiness doesn't have much to do with how big your apiaries are. We know that, from a commercial point of view, beekeeping has been beset with problems. I, too, have found them pretty discouraging. I think we are now beginning to put those problems behind us, and that beekeeping, in the years to come, will take on a new vitality. But in any case, the thrill of beekeeping is, for the backlotter, still the same as ever, and it is compounded of many, many small and unique joys.

*Me, and my honey stand in earlier days.*


I discovered – or rediscovered – another one this year. That is my honey stand, or rather, people's reaction to it. It is run entirely on the honor system, and that works – works not only in the sense of being profitable for me, but by inspiring those who patronize it. It redeems their faith in humankind. The people who come there do not steal. There is hardly ever the least discrepancy between what should be in the cash box – conspicuously labeled "Honor Box" – and what should be there. And the box is not locked. People pull up, study the shelves, read the explanatory notes I have put there, make their selections and then, when they lift the lid of the honor box to leave payment, or perhaps make change for themselves, they are apt to find it already stuffed with money, sometimes quite a lot of it. They do not take it, ever. And then they go off, their hearts warmed, the spirits lifted, and their optimism about the general state of the human race considerably nourished. Most of the patrons of my stand are tourists. They have never seen my honey stand before. Indeed, they have never seen anything like it. Many then return, sometimes years later, leaving a little note to that effect.

There is always a little pad of paper there, and a jar full of pencils. I provided this so the customers could do their arithmetic. But instead, the pad is used mostly for notes to me, from people far and wide. I treasure them. By the end of the season I have a large accumulation. The people say who they are, where they have come from, and how much my simple little honey stand, totally unattended, has done for them. The commonest expression in these notes, I think, is "God bless you." Of course the stand is not really *totally* unattended. We cannot see it from the house – the bushes have grown too high – but we often can hear when someone is out there, and I, or someone, replenishes the shelves from time to time and deals with the cash box.

Often tourists pause to take pictures. A couple of days ago I drove into the yard to find a beautiful woman taking pictures with a camcorder. She didn't see me until I approached and greeted her. Then she swooned, as though beholding the second coming. "I can't believe it! I just can't believe it" she kept repeating. Here, standing before her, was the beekeeper himself, the very designer of this, to her, miraculous setup. She turned out to be from Los Angeles. Soon after I happened to encounter a family from Brooklyn, whose day

had likewise been made joyous by my trusting system. City people always react with incredulity, understandably The sense of honor is not strengthened in that environment.

There is a secret to my system – no longer a secret, because I have described it before. The secret is to appeal to the better side of people, to their sense of decency and self worth, rather than try to get the same result by working on their fear. There is no sign at my stand threatening prosecution to thieves. That wouldn't work. Instead, there is an instruction, in fairly large writing, to make their own change from the honor box, and thanking them for being honest. And, at eye level, there is a card, with the typed message: "Of all those who have visited my stand, only two were thieves, who took advantage of my trust to steal from me and my children. REJOICE that you are not that kind of human being."

That, I am convinced, is what does it. It would be virtually impossible for anyone with the least sense of self worth to read that, and then steal from me. I believe no one has taken a jar or a section this summer without leaving payment. I think it has happened only twice in the past several years.

The joys of beekeeping are not measured in dollars, nor in the size of your apiaries, but in little things like this. BC

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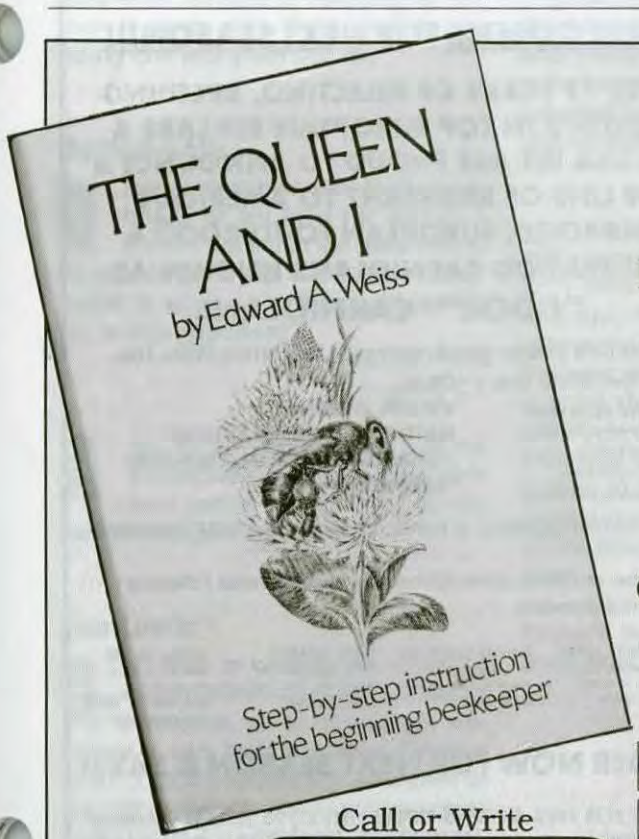


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# ?Do You Know? Answers

1. **False** *Melissococcus pluton*, the bacterium that causes European foulbrood does not form spores. This bacterium overwinters on the sides of the cell wall or in feces and wax debris on the bottom of the hive.
2. **False** The spores of American foulbrood remain viable for an indefinite period of time, even when the spores are within honey. Infected larvae die and eventually dry out to form scales, each of which contains approximately 2.5 billion spores. Cells containing scale often are filled with honey and the honey becomes contaminated with spores.
3. **True** While American foulbrood attacks mainly worker brood, occasionally queen and drone larvae are affected.
4. **False** Periodic testing of the susceptibility of *Bacillus larvae* has not provided any evidence that the pathogen is developing resistance to the antibiotic oxytetracycline HCL.
5. **True** While numerous chemical compounds have been evaluated in North America for the control of chalkbrood disease, there are currently none registered for treating this disease.
6. **True** Characteristically, scales caused by European foulbrood disease are rubbery rather than brittle as are those caused by American foulbrood disease. Thus, European foulbrood scales are much easier to remove than are American foulbrood scales.
7. **True** Spores of *Bacillus larvae* germinate approximately one day after ingestion by the honey bee larva. The susceptibility of larvae decreases with increasing age and they become immune 53 hours after egg hatch.

8. Burning infected hives and bees
   Ethylene oxide fumigation
   Gamma radiation
   Terramycin (oxytetracycline HCL) treating

9. Breaking the brood cycle to allow nurse bees time to remove diseased material. Requeening with a potentially more prolific queen.
   Introducing a new queen whose progeny may display greater hygienic behavior.
   Requeen with a line that is less susceptible to the disease.

10. American foulbrood is spread from colony to colony by:
    Robbing bees
    Drifting bees
    Feeding honey or pollen from a diseased colony
    Interchanging brood combs among diseased and healthy colonies

11. An $LD_{50}$ is the dose or number of microorganisms required to kill 50% of the one-day-old larvae.

12. B) American foulbrood
13. C) Chalkbrood disease
14. B) American foulbrood
15. B) American foulbrood
16. B) American foulbrood
17. H) European foulbrood
18. C) Chalkbrood disease
19. D) Stonebrood
20. G) Amoeba disease

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


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# Questions?

## One & Only

**Q** **You recently described a successful commercial beekeeper who, you said, overwinters his bees in a single story. How is that possible? Does he feed them all winter?**

**Ron Ridder**
**Hermiston, OR**

**A** The commercial beekeeper in question is in Wisconsin, where winters are long and cold, and no, he does not feed them all winter. I have myself been surprised to find that some of my hives, single-story simply because I did not get around to giving them the additional space, winter just as well as the taller hives, and our winters are long and cold, too. What matters is not how big the hive is, but how heavy, and a single-story hive, heavy with honey in the fall, and properly protected from excessive wind or other stress, winters over just fine. Being a comb honey beekeeper, I have even thought of reducing all my hives to single story. Right now they are mostly one and a half stories.

## Bottoms Up

**Q** **I neglected to reverse the bottom board of my hive for winter. I should think that the bees would be able to get up to the combs much easier in winter with the shallow side up. Is this important?**

**George Piper**
**Torrington, CT**

**A** No. What is important is that the entrance be such as to keep mice from getting in. The bees do not care how large it is.

## Fan-tastic

**Q** **My hive is heavily insulated for winter. When I put my ear at the entrance, or at the upper entrance, I can hear the bees fanning even in cold weather, and see them at the entrance even in very cold weather. Sometimes it is very loud. Are they trying to draw cold air into the hive?**

**George Piper**
**Torrington, CT**

**A** Usually when bees fan at the entrance, especially during a nectar flow, they are evaporating the moisture from the nectar or from the hive. I suspect that, being heavily insulated, your hive accumulates moisture inside, and the bees are trying to get rid of it.

## Insulation

**Q** **Last fall I made an insulation board for the top of my hive, but had so much insulation board left over that I made four sides and screwed them to the hive. Then I wrapped the hive in black plastic, reversing the inner cover and making a notch in the edge for ventilation. I reduced the entrance to three inches by one-quarter inch. On sunny days, even in cold weather, the side of the hive facing the sun gets very warm. When it gets up to 35° or more the bees fly out and land in the snow, sometimes in great numbers, and I have never seen one of them make it back to the hive. I read that you should wrap bees in dark material to absorb the warmth, but what good does that do if you just lose all these bees in the snow?**

**Name Witheld**

**A** You are over managing, and have learned a costly lesson. The only time I ever wrapped a hive, long, long ago, I had the same experience as you, and have never done it since. What the bees need to get through the winter in good shape is (1) plenty of stores, namely, honey, (2) ventilation, to prevent moisture buildup, and (3) entrance guards, to prevent mice from getting in. They survive even severe cold very nicely, provided they are not subject to wind.

**Editor's Note:** The bees that flew out were most likely older bees, produced last summer. They would have expired in the early spring anyway, so your coloniy was no less off from their loss.

## Brrrrrrr . . .

**Q** **I have vented all my hives this winter but still have frost and ice inside the hive. How can I correct this?**

**Web Hunt**
**Benson, VT**

**A** About all you can do is make sure there is a way for moisture to escape from the top of the hive. I leave the inner cover holes partly open, so moisture escapes (I hope) from under the loose-fitting telescoping covers. Beyond that, it is a good idea to tilt hives forward so that any melting frost will drip from the front of the hive.

## Apistan Strips

**Q** **I have a two-story hive and do not know how to use these Apistan strips. Should I put two strips in each story, or just put two in one story? Which one?**

**James B. Johnston**
**Shubuta, MS**

**A** I believe the current recommendation, and the one I go by, is to put two strips in whichever story has most of the bees, which, by the time spring comes, is the top story in my latitude. Put them between about the third and fourth frames, counting from the sides.

**Editor's Note:** Current recommendations are to use 1 strip/5 frames of bees. This time of year that *most likely* means 2 strips in the lower brood chamber.

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*Please send questions to Dr. Richard Taylor, Box 352, Interlaken, NY 14847, enclosing a stamped envelope for response.*

# Answers!

Richard Taylor

*INNER ... Cont. From Pg. 542*

safer way to move bees, or Do you see my point? If each member makes money, saves time or becomes a better beekeeper because of that one talk the benefits far, far out-weigh the cost. The sum gained is greater than the sum paid.

Outside speakers are no different, except they should be paid better. Why? Well, travel time and costs certainly add up. Time away from home or work has a value. Gas isn't free. And there's still the prep and put-away time. Plus, an outside speaker usually has skills or knowledge you can't get internally. And that in itself has a value. An added value.

I know most groups aren't rich, especially if the only income is from dues. And I know officers and others volunteer their time without compensation. That's a given. But if you want speakers – cold, hard cash is a must.

So, where do you find these people you've decided (I hope) to pay?

Start with commercial beekeepers. Especially those who don't belong to your group. Commercial beekeepers know a million secrets about how to keep bees. Off season they usually have some time, and, off season their cash flow slows a bit. Don't be shy or bashful. Find one (or two or three) in your area and call.

What about packers, or, more probably, a producer packer who can talk about packing honey. There's lots to learn there. Consider someone who pollinates. They move bees, negotiate contracts, deal with trucks and forklifts and interstate inspection certificates and pesticides and bad weather and muddy roads. There's lots to learn there, too.

And there's the guy who makes all those wax things for every craft show, farmer's market, county fair and the like. Now there's something everybody could use, right?

Of course, just down the road there's another county group that meets once a month, too. And they have their own resources. What about a joint meeting once in a while? They have speakers, you have speakers, they have gaps, you have gaps, need I say more? Give them a call, what can it hurt? And, you'll meet some new people, and learn something besides.

What about big names? They are certainly a draw, but they cost money, big money. Once a year perhaps, or, maybe one of those joint meetings (with one, or two or three groups to spread out the cost) would work. That could really be an event, couldn't it?

With a little imagination, some phone work and support (member and financial) you could make this work for your group. Given all these options, plus all those I've left out your group could have a dynamic schedule for every meeting that's not outside, with the bees.

But don't just talk about it. Do it. This week. Tonight. Good luck.

*Kim Flottum*

# Gleanings

OCTOBER, 1994 • ALL THE NEWS THAT FITS

## NHB Meets, Too
# ABF IN AUSTIN

Beekeepers attending the 1995 American Beekeeping Federation convention will have an opportunity to experience a meeting of the National Honey Board as part of the ABF convention. The early part of the program will feature presentations by the Honey Board; at the end of the week, the attendees can take part in either the Winter Honey Board meeting or the ABF workshops and special interest sections.

The Austin Marriott at the Capitol will be the convention site. The 16-story hotel features 365 guest rooms with all the amenities associated with a first-class hotel, including an indoor-outdoor pool and a fully equipped health club.

The pre-convention activities begin on Tuesday, Jan. 17, with the ABF Executive Committee in the morning, various committees in the afternoon, and the ABF Directors in the evening.

The general session will convene on Wednesday morning and continue through Friday noon. The business meeting is set for Friday afternoon and the banquet, Friday evening. Saturday, Jan. 21, will be devoted to workshops and special interest sections – and Honey Board meetings. The Directors and Executive Committee will close out the convention on Sunday, Jan. 22.

Plans are being laid to make the Austin convention another "event not to be missed." Program chairman John Thomas, retired Texas A&M extension apiculturist, is assembling a list of top-notch speakers for the program, workshops, and special interest sections.

Commercial and educational exhibits are being enlisted for the trade show. A special feature this year will be a display of historic bee smokers by Paul Jackson, the TX chief bee inspector, from his 100-plus collection.

An important part of any ABF convention is the social interaction – the opportunity to meet and greet beekeepers from across the country and to learn over dinner, or just a cup of coffee, how they approach the opportunities and problems common to all beekeepers.

For information on exhibit and advertising opportunities, contact the ABF Office, P.O. Box 1038, Jesup, GA 31545, ph./fax 912-427-8447.

## What Happens In 95?
# NZ QUEENS & PKGS. DENIED ACCESS

The Canadian bee importers of New Zealand and Australian honey bee stocks were forced to find alternate routing this spring when the United States transit ban closed down Canadian access to Honolulu and other American airports. These airports had been used to either refuel planes or to transfer cargo (packages and queens) to other carriers for final destinations in Canada, (Vancouver and Toronto).

Estimates for package bee imports based on booked orders were for 10,000 to 15,000 1kg packages and many more queens. The best alternate route was through Tokyo, Japan, and this required changes by the Japanese government (this was achieved on April 12, 1994).

The very first pallet of package bees shipped on April 19th suffered approximately 75% dead from overheating. Almost all of the remaining bookings were cancelled because the risk of a repeat loss was too great for both the importers and the airlines.

There was not the same problem with queens and most orders were filled using routes other than the United States. The first few shipments were not handled correctly with some losses resulting, however these problems were corrected and most subsequent shipments arrived on schedule and in good condition.

Imports of Hawaiian queens were at record levels with no transit problems between Honolulu and Canada.

The Canadian industry has a stable wintered hive count but many operators still import significant numbers of queens to make up losses or to expand their hive counts.

Packages are still important to many new beekeepers, small operators and some commercial operators as shown by the 10,000+ packages that were ordered.

The Canadian Honey Council will continue to urge the United States Department of Agriculture to make the regulation changes that are necessary to re-establish Canadian access to transit of New Zealand and/or Australian beestock through Honolulu. There remains a good demand in Canada for healthy, mite-free and non-African stock. Hawaii, New Zealand and Australia are all able to help fill this market, given access to reliable and fast transportation routes.

# NC CANCELLATION

The North Carolina Beekeepers' State Association held their summer convention in Cherokee from July 28-30, 1994. One of the highlights of this convention was a special stamp cancellation from the post office.

If anyone is interested in receiving one of these cancellations send $2.00 plus a self-addressed stamped envelope to Arlene Samford, P.O. Box 1164, Cherokee, NC 28719.


# SC GETS NEW POSITION

An Apiculture Research and Extension position has opened at Clemson University, Clemson, SC. Responsibilities include 75% extension and 25% research which can be appointed at the Assistant or Associate Professor level. The successful candidate will be expected to conduct aggressive extension and research programs in Apiculture with emphasis on colony management for pollination, honey production, and protection of bees from diseases, parasites and other pests. This position interacts directly with faculty in other disciplines, county extension personnel, and members of various county and state honey bee associations.

Candidates must have an earned Ph.D. in Entomology, have experience with honey bee management and applied research in Apiculture. Experience in molecular biology and/or genetics is desirable. Ability and willingness to interact with other scientists are essential. Successful candidate should have demonstrated success in attracting competitive extramural funding.

For information inquiries may be directed to Professor Randall P. Griffin, Chair, Search Committee, Dept. of Entomology, Clemson Univ., Box 340365, Clemson, SC 29634-0365.

## Beekeeping in Paradise

# KONA QUEEN WINS AWARD

Gary "Gus" Rousé is the owner of Kona Queen Company. Rouse was named Small Business Exporter of the Year for the state and region nine at the 1994 U.S. Small Business Administration awards luncheon hosted by the Kona-Kohala Chamber of Commerce on April 13.

Kona Queen Company raises queen bees for markets around the world and has become an industry leader across the country in the last four years. The company, located in Napoopoo, has also become a referral center for buyers and sellers working with bee-related products.

The company has the biggest operation of the three commercial beekeepers on the Big Island, is the largest commercial queen bee operation in the state and one of the largest in the U.S. Operating since 1976, they produce 1,000 queens daily.

Rouse, a delegate for the American Beekeepers Federation, began as a beekeeper when he and his wife started working for the company in 1979, worked his way up to part-owner, then majority owner and now full owner.

"The company was owned by two owners when I bought into it," Rouse said, "and last month I finally became sole owner. It has taken me 15 years."

Rouse was in the bee business in California before he moved to the Island in 1979, traveling around several states with the hives on his truck, going from farm to farm.

"If we finished pollinating one area and the blossoms were ready somewhere else, we would pack up in the middle of the night to get there at the right time," he said. "It was nomadic, migratory life."

When he and his wife visited Kona on their honeymoon, they saw the potential at Kona Queen Company, went back to California and packed.

At that time, the majority of the bees were shipped to farms for honey production and the Kona operation was smaller than it is today. Currently there are 2,500 hives.

Queen bees, who mate for life, are selected for their high performance and behavior. Kona Queen Company has two breeds, Italians and Carniolan from Czechoslovakia and Austria.

"We start with good genetic stock," said Barrie Rouse, Gus' wife. "The hive is just a box with a comb in it. We graft the worker bee larvae out of the hive into cell cups when the larvae are hours old, then take the larvae into a queenless hive for 10 days to mature into queens."

Workers are fed sugar syrup and protein supplements like brewer's yeast, which they ingest and excrete as royal jelly to feed the queens.

The queen larvae are then moved to a queen mating nucleus, or miniature hive, where they hatch within 24 hours, leave the hive, mate with a dozen or more drones in flight and return to the hive. Each queen is then ready for shipment and has enough semen from the drones to lay eggs the rest of her life.

"The agriculture business is basically a 15-week business, then we scale back and maintain the hives and operate at 25% capacity the rest of the year," Rouse said.

Queen bees are shipped one per miniature cell as they will kill each other. Bees are shipped priority mail throughout the U.S. postal service in small containers with 100 bees per box.

"We ship as many as we can every day during the season," Rouse said. "The price of the queens varies from $4 to $7 each, depending upon the season.

"We move about 2,000 hives to the north end of the island to Waimea, Hamakua and the Saddle Road areas during the winter months where plants and trees are flowering, and through the good graces of the community our business is able to survive because we have various arrangements with land owners. Our queen yards are 16 different yards in the North Kona area," he said.

Rouse said his bees are sent mainly to large commercial beekeepers/honey producers, but honey production has fallen off because the Chinese are now exporting honey to the mainland.

His biggest competition is from beekeepers in southern states, but he is able to start six weeks earlier than his mainland competitors and rouse said Hawaii has one of the best queen mating climates.

"Hawaii is also free of the two parasitic mites known on the mainland which can either shorten the bee's life or kill the larvae. The mites have been devastating to the U.S., Canada, Europe and Russia," he said.

It is illegal to import bees into Hawaii.

"I think our business will feel the impact of unrestricted Chinese honey imports," Rouse said. "Our entire industry is getting hammered by that. But up until now business has been good."

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# HONEY BOARD NEWS

"Honey I Love You" stickers featuring the lovable honey bear logo are sporting a new, bright look. The 1½-inch diameter stickers are bright yellow with the logo and the message "Honey I Love You" printed in black.

Stickers are great for kids and adults! The can be used for lapels, on printed promotional material or on a honey point-of-purchase display. (Stickers may not be used on honey product containers.)

Stickers are packaged 1,000 per roll. Each roll is shrink-wrapped. The minimum order for stickers is one roll. Cost per roll is $9 for one roll; $8 each for two to four rolls; $7 each for five or more rolls.

Send a check with your order to the National Honey Board, 421 21st Ave., Ste. 203, Longmont, CO 80501.

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U.S. honey will on be display during the largest food show to be held in Europe this year. The National Honey Board is preparing to exhibit U.S. honey in Salon International de L'Alimentation (The International Food Show) that will be held October 23-27 in Paris, France. SIAL '94 plans to host over 100,000 food buyers from around the world.

The National Honey Board has arranged for exhibit space in the show's U.S.A. Pavilion and invites interested honey exporters to participate. Honey exporters can display their honey products and promotional materials in the Honey Board booth at no charge.

Due to the high number of visitors expected at SIAL '94, the show is expected to be a cost-effective way for small and medium sized U.S. honey exporters to introduce their products to the European market. This show is particularly appealing because it is expected to attract a large number of buyers from other countries, as well as many French buyers.

If you are interested in participating in SIAL '94 or would like more information, please contact Linda Hampel at the National Honey Board office, 1-800-553-7162.

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## Markets & The ITC

# IMPORTS HURT LOCAL, HELP GLOBAL

Liberalization of import restraints would result in lost employment and production in virtually all the sectors of the U.S. economy examined by a study conducted by the U.S. International Trade Commission.

In "The Economic Effects of Significant U.S. Import Restraints," Investigation No. 332-325, published November 1993, the ITC found that employment and production in the given sector of the economy would suffer if the import restraint was lessened in 42 of 44 sectors cited. In most instances, imports would increase and exports would decrease, according to the study.

In the area of agriculture, the study looked at several sectors of sugar, dairy, meat, cotton, and peanut trade. In each instance, the ITC found there would be loss of production and loss of employment in those fields if the existing trade barriers were liberalized.

For every protected sector analyzed in the study, removal of import restraints would result in gains to the U.S. economy as a whole. Simultaneous liberalization of all significant restraints was found to result in a $19 billion gain for the economy.

The study, conducted at the request of the Office of the U.S. Trade Representative, considered only existing import restraints: tariffs and quantitative restrictions such as quota, voluntary restraint agreements, and voluntary export restraints. Import restraints resulting from antidumping or countervailing duty investigations were excluded.

"While this study did not specifically address the effect of adding import restrictions," noted Troy Fore, executive secretary of the American Beekeeping Federation, "it is not a far stretch of logic to see that an industry would show a gain if its import competition were restricted."

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BEE BOOKS BY RICHARD TAYLOR. Send for list, Linden Books, Box 352, Interlaken, NY 14847 (TF)

## PERIODICALS

RURAL HERITAGE – bi-monthly how-to, dedicated to preserving the traditional rural lifestyle, with emphasis on farming & logging with horses, mules, & oxen. Sub. includes THE EVENER Workhorse, Mule & Oxen Directory; $19 for 6 issues; $34 for 12 issues; sample $6. Rural Heritage, 281-B Dean Ridge Lane, Gainesboro, TN 38562.

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THE SCOTTISH BEEKEEPER. Magazine of The Scottish Beekeepers' Assoc. Rates from D.B.N. Blair, 44 Dalhousie Rd., Kilbarchan, Renfrewshire, PA 10 2AT, Scotland, U.K. Sample $1.

DIE NEUE BIENENZUCHT Month. magazine for beekeepers interested in German beekeeping. Hamburger Str. 109, D-2360 Bad Segeberg, West Germ.

CANADIAN BEEKEEPING. The news media of the Canadian Honey Industry. 1-year sub. (10 issues) in Canada and the U.S.A. $20. Foreign subs send $40. to Canadian Beekeeping, Box 678, Tottenham, ON, Canada, L0G 1W0.

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SCOTTISH BEE JOURNAL. Monthly magazine. Sample copy from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. $4. per annum.

BEE CRAFT – Monthly journal of the British Beekeepers Association. Subscription, including postage is £12.96 surface mail to Mr. L. Connor, P.O. 817 Cheshire, CT 06410.

THE AMERICAN BEEKEEPING FEDERATION needs your support in efforts to stop adulteration, improve marketing conditions and encourage research on African Bees and Varroa and Acarine Mites. For information, membership application and sample of bi-monthly News Letter write to: THE AMERICAN BEEKEEPING FEDERATION, INC., P.O. Box 1038, Jesup, GA 31545-1038.

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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.

RARE BREEDS JOURNAL. Bi-monthly journal about exotic, minor & rare breeds of domesticated animals & their owners. $18.00 (U.S.)/year, $24.00 Foreign; $2.50 for sample copy. Rare Breeds Journal, Dept. Bee, HCR 1, Box 45, Hebron, ND 58638 (701) 878-4970.

BRITISH BEE JOURNAL. Month. single copies 33p + postage. $15./yr. U.S. Annual subscription postpaid. Sub-agent: 46 Queen St., Geddington, NR Kettering, Northants, NN14 1AZ, Eng.

Bee 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 $27.50 (Aus.), AirMail $40.70 (Aus.). Write to: Victorian Apiarists' Association Inc., Editor, Ms. Judy Graves, 23 McBride Rd., Upper Beaconsfield, Victoria, 3808, Australia. Sample $3 (Aus.) on request.

***BOTTOM ... Cont. From Pg. 604***

It's tricky, but I'll give an indeterminate vote – there's no real answer – on this one.

**CHAOS FACTOR.** Which society runs smoother? The U.S. economy, running for 300 years, far surpasses any beehive. But we must take into account that a bee's life is much shorter. If an average bee lives for 10 weeks, and man lives for 75 years, then the ratio is 375:1 man:bee. I had a beehive that prospered for 12 years without ever needing any human intervention. Based on the 375:1 ratio, my hive survived 4,500 years. That's the entire history of civilization. In that time, the hive survived swarms (revolution), disease, potential starvation, and queen replacement (change of leadership), to name only a few calamities.

As far as stability, I put my money on a beehive over human society any day. On balance, then, the bees run better, more efficacious economic systems than man does.

If you don't like my economic analysis, consider this: Does a bee's world, where everyone lives for the common good, and everyone contributes what they can, and everyone works hard all day, and hangs out together at night, reflecting on the stars and talking to neighbors, sound enticing to you? It sounds like paradise to me.

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THE NEW ZEALAND BEEKEEPER. Quarterly magazine by the National Beekeeper's Association of NZ. Write for rates & indicate whether airmail or surface mail. NZ BEEKEEPER, P.O. Box 4048, Wellington, NZ.

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## Display Advertisers Index

# Of Beehives And Economics

howard scott

Lately, my wandering thoughts have lead me to think about the efficacy of the economic system of a beehive. I use the word efficacy because my old college economics professor used that term to measure an economy. To him it meant a combination of efficiency and goals. So let's compare the economic systems of bees and man, and see who comes out better off. The four criteria of any economic system are:

- efficiency
- waste
- standard of living
- chaos factor

**EFFICIENCY.** Let's face it, bees are marvelous engines of efficiency at producing product and distributing it to members. Everybody except drones works, and the shirkers are quickly eliminated. Everybody has assigned tasks. Everybody is motivated to contribute to the common good. There is complete trust in the system. Likewise, on the distribution end, everyone receives her equal share. No one is discriminated against. There is never any holding back of stores.

This is true socialism. "From each according to her abilities to each according to her wants," is their motto. On hot summer days, the foraging bee gathers product until sheer exhaustion overtakes her. She doesn't hoard her catch, but rather turns it over to coworkers, where it is placed in a great communal vat, out of which her share will eventually come.

In contrast, scan our current economic systems – U.S.'s capitalism, China's communism, Italy's socialistic capitalism. None of the systems work too well. Our capitalist system is based on the premise of greed, a private vice, that creates public good in satisfying wants. Well, greed does supply goods, but it does so unevenly. Some get many goods, and others don't get enough. In addition, workers aren't very cooperative with each other. They're always wondering if they're being treated unfairly. Look at communism in China. Most of the one billion citizens still live as peasants. They say that in Italy, when the mail piles up, postal workers burn it.

My call is that the bees have written the book on efficiency.

**WASTE.** Nothing is wasted in a beehive. Collected pollen is used to feed young bees. Secretions are turned into wax, which is the building material of hives. Propolis, obtained from buds of trees, is glue used to seal up open spaces and strengthen the structure. Nectar churned into honey supplies bees with their complete diet. All food is consumed, and what is left, is consumed the next year.

Compare this to our capitalistic system of distribution and consumption. Much of what is made languishes on store shelves. Advertising campaigns must be undertaken to stimulate demand. And while some households find themselves throwing away much of what they buy, or hardly ever using some products, other families find themselves with not enough. Granted, people want a variety and that causes some complications, but there is no sense that our economy is delivering satisfaction. Other economies around the world fare far worse.

So point #2, bees waste less than man.

**STANDARD OF LIVING.** Who has a higher standard of living, bees or man? Certainly man consumes a greater diversity of products. Moreover, man has improved his standard of living over the centuries. But do bees want more? As true socialists, they seem to accept whatever bounty is put on the table.

But the question should be asked: Is man better off because he has improved his standard of living? Certainly, because of dramatic improvements in technology, equipment, and knowledge, man can obtain more with less. He lives healthier and longer now than he did 200 years ago. But what about the quality of his life? My guess is that all the increases in productive ability have brought man no farther towards satisfaction. If anything, these advances have caused as many difficulties – pollution, environmental concern, population explosion, spiritual anomie – as satisfaction. And besides, with all his inventiveness, man hasn't improved on the process of honey gathering and creation. No man-made machine gathers nectar and pollen or processes honey better than bees. So if men were bees, they'd still be doing things the same old way.

*Continued on Page 602*