AUG 1996

# BeeCulture

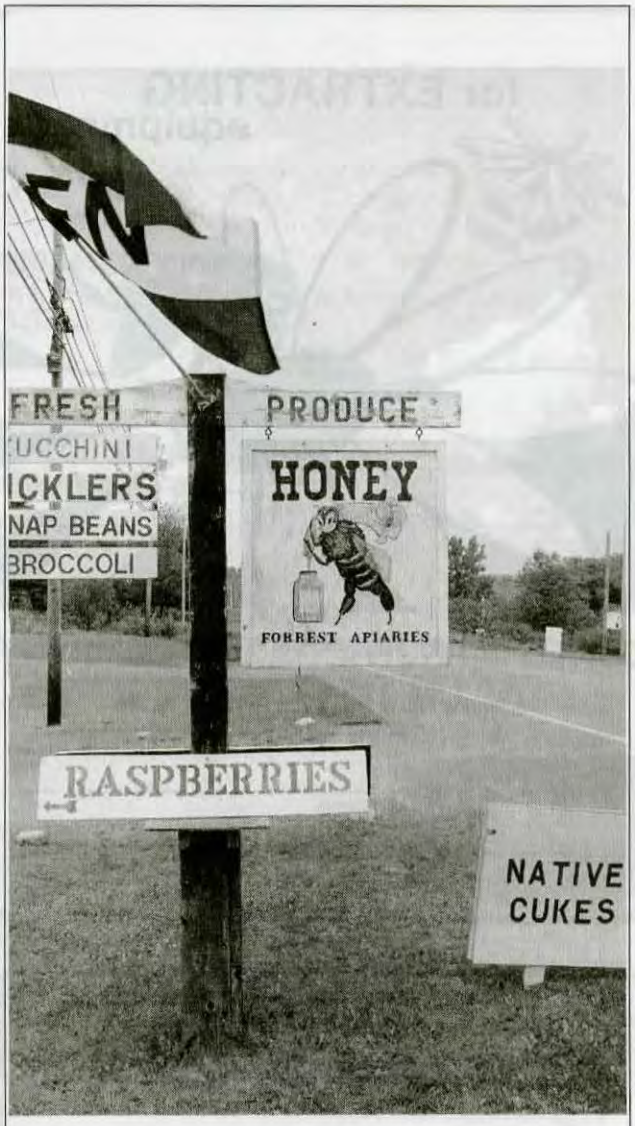
# Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

AUGUST 1996 VOLUME 124 NUMBER 8


## FEATURES






**COVER**

*Selling honey from your home can be profitable, and it's easy to do. One thing you need is a sign, easily read from the road that tells the story. This sign was seen at a small farm market in Maine.*

photo by Kim Flottum

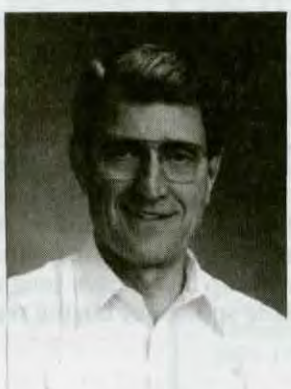
## DEPARTMENTS



## COLUMNS



*The Mysterious Disappearing Queen & How To Replace Her, Pg. 466*



JOHN ROOT
*Publisher*

KIM FLOTTUM
*Editor*


*Bee Culture is Printed on Recycled Paper*

# INNER COVER

Here's one you've heard before, but it needs to be retold.

I was talking to the President of a State Association recently who told of a phone call he received. The caller was a 200-colony part-timer who was complaining about all manner of beekeeping things. He talked, whined and complained about 15 minutes before he ever let the President get a word in.

Finally, he slowed enough to be talked to. And this is what the President found out. The complaints were primarily about what the "state" was doing about the problems with the mites, reckless inspectors, representation on the Honey Board and the new AFB ruling. It seemed he was having trouble with these, and wanted "somebody" to do something.

While he was talking the President grabbed his membership list and checked to see if he was a member. Nope, not for the last four years, anyway. So he asked. Nope, hadn't been to a meeting in years. Those guys were just a bunch of backyard small timers. He'd forgotten more than most of them would ever know.

But while he was busy knowing it all, the "state," those bunch of backyard small timers, had rewritten the Constitution and bylaws, persuaded the state regulatory people to update the laws to deal with mites, AHB, migratory beekeepers and trespassing and they'd also started a Master Beekeeper's Class.

"Well, I guess I didn't know that," replied the complainer.

"Yes, I guess not," said the President.

The lesson here, of course, is if you want change to take place, don't wait for others. It either won't get done or what gets done may not be to your liking. The only way to make things better is to get off your couch, out of your honey house, and get to a meeting. Join the group, pay your dues, get on a committee, fill out the forms, straighten chairs, hold an office . . . in short, get involved, and quit whining.

If beekeeping is important to you and yours, leaving those of us who are involved alone because we are involved won't help you. If what's going on isn't what you like, and you *don't* do something, there's not a lot of sympathy out here.

•

I trust this past year has been the lesson of all time relative to treating for *Varroa*. If you haven't treated by now you want to seriously, very seriously, think about getting honey off and treatments on. Even a very few mites left from last spring, or a reinfestation during the summer will build to lethal numbers by late winter. By now, buying replacement packages every Spring is getting old, right? Get going so you don't lose colonies, again, this winter. Honey off, strips on. Maybe you'll lose some fall crop, but you'll definitely save a colony. And reduce all the rest of the stresses while you're at it. Feed, if needed. Pick a good winter spot. Think of AFB, nosema, mice, wind breaks, air and water drainage, grease patties and maybe, a little later, some insulation on top if you have tough Winters.

Next Spring, plan on making splits, not buying replacements.

•

How many people, including yourself, use the term 'dispose,' when referring to a honey crop?

"Yup, got it all extracted, now just need to dispose of it and I'm done," is heard way too often.

Grammatically it's correct I guess. And to some the honey gained each season really is a chore, while the joys of honey bees are in the watching and benefits of pollination.

But even so . . . Dispose? That's a term used for low level radioactive waste, a used diaper, or what you do with the black and chunky gunk that drains from the crankcase when your oil gets changed. That's the stuff you 'dispose' of.

Honey (remember, this is food) is marketed, or sold, or wholesaled, or retailed or moved. It has value and should be referred to as such. Wouldn't this sound better . . .

"Yup, got it all extracted, now just need to get it moved to my wholesaler and I'm done."

Please, let's dispose of disposing a honey crop.

*Kim Flottum*

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# Bee Culture

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# MAILBOX

## Honey, Medication

Dear Editor,

In response to Richard Taylor's article in your excellent June issue. I have a system to take advantage of my Fall flow. In April, 1995 when removing my Apistan strips I replaced the two outside frames (in hives with sufficient stores) with frames of new foundation and 1995 written on top. I then soon after supered and managed in the usual manner.

In late August I removed all supers and these "1995" deep frames, replacing them with the remaining frames I removed in April or new foundation as necessary. The April frames had been stored in my freezer.

I medicated and applied Apistan at this same time and froze all removed "1995" frames. I also removed at least one and sometimes two frames of honey from all hives that had been started in 1995 on new foundation (nucs and packages).

On October 3, I removed Apistan and inspected for winter stores adding back the earlier removed frozen frames as necessary. The balance of the "1995" frames removed, I extracted, if sealed. If not cured, I left them frozen and refroze all extracted 1995 frames. These "virgin" frames were reused this May during the same manipulation relabeling 1996. This system has several uses.

1. I was able to at least partially benefit from the full flow.

2. I used the stored unsealed frames as food in late Winter/early Spring inspections as needed.

3. I had a ready supply of drawn comb for nucs as needed.

4. It requires little extra effort as the hives were already torn down at the time of the manipulation.

By careful labeling and storage I should be able to use some of these medication-free combs several years. It worked well last year. This year's flow is yet to be seen.

The one special requirement is a spouse who does not object to a freezer at least half full of comb.

Bill Rauch
Higginsville, MO

## New Education Package

I recently authored a software program entitled "The HoneyBee" - "An Educational program About HoneyBees, Their Role In nature, and Their Value To All Of Us As Human Beings." The program is freeware and has some excellent close-up photographs, courtesy of P-O Gustafsson, a commercial beekeeper in Sweden.

The overall purpose of the program is twofold: (1) Promote good PR for HoneyBees in general, and (2) To promote beekeeping as a hobby and/or vocation.

It has been uploaded to America Online and it is in the Kids Apps section. It can be quickly found by going to AOL-Quickfind and either typing in my name Needham or Honeybee.zip.

Al Needham

## Dance Language Defended

This is in response to the "Guest Editorial" by Ruth Rosin in the June issue of *Bee Culture*, regarding the dance language controversy. Rosin criticized our very brief description of the honey bee dance language in one of our earlier articles on observation hives (July 1995). Rosin claims that the recruit bees use odor to find the food source indicated by a dancing bee, and that the recruit bees' use of the waggle dance for direction information has not been proved.

In fact, research has clearly shown that recruits use the direction information indicated by the dancing bee, as elucidated originally by Karl von Frisch. It's important to note that much of the important work on bee dances was done after that of von Frisch. His work alone was not conclusive. It's also clear that bees do use odor cues too. Under certain conditions odor cues will be used instead of the dance information.

One study by J. Gould showed the bees' use of dance information. The ocelli of the dancing bee were covered so that she would give incorrect directions to recruits. The recruits did use this information in their search for the food source, eliminating the possibility that odors were a cue. Other experiments used a "robotic bee" invented by A. Michelson and W. Kirchner. It was programmed to do the waggle dance, and bees did follow the directions of this little robot. In this way, odors and other extraneous cues were eliminated as possibilities. Numerous other careful studies have illuminated many details of the bees' communication through the dance language.

Furthermore, the dance language certainly does not require bees to do arithmetic or "count" in a human sense, as Rosin seems to think. What the recruit bees do get from the dance is distance and direction information on a graded scale or continuum. The recruits' response is in turn graded so that they search in the appropriate area for the food source.

Bees do many things that might seem at first glance to require mathematical reasoning. For example, comb construction involves complex principles of geometry. However, no one claims that bees must understand Euclidean geometry and make calculations in order to construct the comb.

Finally, our statement that most biologists believe in the validity of the dance language is not our argument for its validity, as Rosin implies. Our conclusions depend on the results of carefully conducted experiments.

Readers who wish to explore

*Continued on Next Page*

# MAILBOX

this issue further may want to read Chapter 4 in "The Honey Bee' by J.L. Gould and C.G. Gould (1988, Scientific American Library). A fascinating description of the robot bee is in "The sensory basis of the honeybee's dance language" by W. Kirchner and W. Towner, in the June 1994 issue of Scientific American.

Thomas C. Webster
Kentucky State University
Dewey Caron
University of Delaware

## Bee Language Semantics

I want to comment on Ruth Rosin's bee dance editorial in *Bee Culture* 6/96. First something old that is new. Last year I stumbled on a book published in Paris and London in 1739 by Abbé Bougeant entitled *A philosophical amusement upon the language of beasts*. This first (?) proposal that social animals, including ants and bees, have systems of communication has been overlooked. For his trouble Gougeant was summarily "confined" and forced to write a letter of retraction. Such a severe correction was necessary because the Church believed that if animals have language they must necessarily also have souls. Perhaps the flip title was intended to forestall censor attention.

The word "language" can be a semantic minefield. One dictionary states unambiguously that "the method of communication ascribed to animals is their *language*, not their *speech*." Language is *all* that animals can have. Ms. Rosen is using speech and language ambiguously when she refers elsewhere to von Frisch's bee dances as a "Human-level hypothesis" requiring a "higher psychic power" to interpret. Compared to the detection of movement and sound, identification of floral scents requires extremely sensitive mechanisms capable of discriminating mixtures of very complex chemical compounds. We would require microanalyses by a biochemist, or the cooperation of a trained dog.

Ms. Rosin misrepresents the *Bee World* reference. It is the reprint of the 1939 von Frisch article that she stumbled upon. As in an earlier 1925 feature article it reports "bees have a fine sense of smell and that this aids them in their search, but that when they communicate with each other it is not by smell, but solely by the dances already described." Ms. Rosen did not mention that the 7/95 *Bee Culture* also had a Roger Morse review of the five-year study that demonstrated bees do hear the sounds that indicate distance during the wagging dances.

Elsie and Nickolas Collias demonstrated bee dances at Cornell in 1952, but were unable to do so at the University of California at Los Angeles in 1958. Their observation hive was located across the street from a large botanical garden that provided a profusion of flowers all year, and so close that dancing was not required (*American Bee Journal*, 12/90).

The suggestion that bees locate blooms by odor from downwind only is contrary to J.E. Eckert's finding in 1933 that prevailing wind did not influence their flight. Bees flew to the areas worked before being moved (as far as 8.5 miles), and confirmed previous investigations "that bees have a tendency to return to the same portion of a field, or to the same small field, on successive days for nectar and pollen, even though other areas of the same forage plant are nearer" (J. of Agr. Res. 47(5): 257-285). See also H.J. Rock *Bee Culture* 8/76.

The bee dance controversy has stimulated experimentation to provide evidence of the importance of back-up systems for navigation using sun, polarized light, and landmarks. When nectar/pollen sources are nearby, odor mechanisms common to other bees and insects are used exclusively. The unique bee dances make it possible for a colony of honey bees to search, find, and communicate food sources miles from the nest for a powerful competitive advantage.

Toge S.K. Johansson
East Berne, NY

## A Job Well Done

Thanks for doing a great job and keeping well written and informative articles.

The articles in your magazine are written so an amateur or a master can enjoy them without some of the technical mumbo-jumbo that no one can comprehend.

Dennis Brown
Roseburg, OR

## Solar Wax Melter

Permit me to add what I think are important points to Richard Bonney's article on Solar Wax Melters (June 1996), since I built one 20 years ago, employing the Penn State plans that he offered his readers and use it constantly both for purifying wax and for one other special purpose.

He mentions the use of a grid to keep the wax, frames, etc., above the main pan. I discarded that very early on, after the initial use, since it was unnecessary, a waste of time, and hard to clean.

When melting cappings, I place them in a discarded nylon stocking, attached to the outside of a No. 10 can (restaurant-size), with both ends removed, as a filler. When the nylon is filled, both ends are closed with bread-ties. The filled stocking is placed in the main pan above six-inch milk filters, one of which partially closes the mouth of the main pan. As the cappings melt, they move through the filter and drop into a one-pound loaf collector pan at the next lower level, cradled in another pan three times its size to catch overflows.

If whole frames with extracted comb, etc. are to be melted for any reason, I put down a sheet of 18-inch wide freezer paper first (doesn't matter which side is up). It is discarded after the melting: the main pan is left clean!

Whole frames filled with honey, wired or not, can be "extracted" this way if (1) they are too fragile to be put in the extractor where they will be blown apart or if (2) one's extractor has been cleaned and set aside for the season. Under these conditions, the loaf pan is set aside and only the larger one used. The next morning the wax has solidified and floats on clean honey. Thus the

# MAILBOX

SWM serves as a clever surrogate extractor.

John Iannuzzi
Ellicott City, MD

## Help From The Honey Board

As chairperson for Promotion of Honey in South Dakota, I have found the National Honey Board a valuable resource. Having a limited promotion budget, I find it a great asset to be able to obtain handouts, tapes, and other materials to use in presentations to varied groups.

Need a program for children? Call the Honey Board. They have "What's Buzzin" and a new children's cookbook, "Honey Magic," available.

A ladies group? The Honey Board has VCR tapes, recipe handouts, honey tip sheets. In these different ways you can show and teach anyone how to use more honey in their everyday life.

Need a presentation for a varied group? Call the Honey Board for handouts about the honey bee and floral sources – what's new in the supermarket – honey bee trivia. The list goes on.

I enjoy showing the latest magazines with articles and recipes using honey; every one brings a new awareness to using honey.

Need help or have a question? Call the Honey Board; they are there for us to use.

Judy Gulleson
Britton, SD

## Honey Board or Not?

Should our industry have a Honey Board or not? This question has been in many beekeepers' minds over the years. As a honey producer and as a producer-packer, I can see a very steady increase in customer demand and usage.

Industrial honey users are using as much or more at a higher price today than they did a year or two ago. As a past Honey Board member, I have seen our food technology consultant work with mom-and-pop bakeries all over the country. How about the research done at Geneva, NY, on honey beers and wine. This year the Genessee Brewery in Rochester, NY, is going to use 1 million pounds of honey in its Honey Brown Beer.

We produce in this country about 200 million pounds of honey each year. Our consumption is 325 million pounds. We import some, but when world honey production is down and demand is high, that causes prices to go up. When prices are up, more promotion is required to maintain demand.

Over the years, as a member of the Nominating Committee and as a Honey Board member, I can say our industry has gotten its money's worth out of the National Honey Board. For each dollar spent, it has expanded our honey market.

Do we need a Honey Board? You bet we do. Support the National Honey Board's future work with a positive vote in August.

Ed Doan
Hamlin, NY

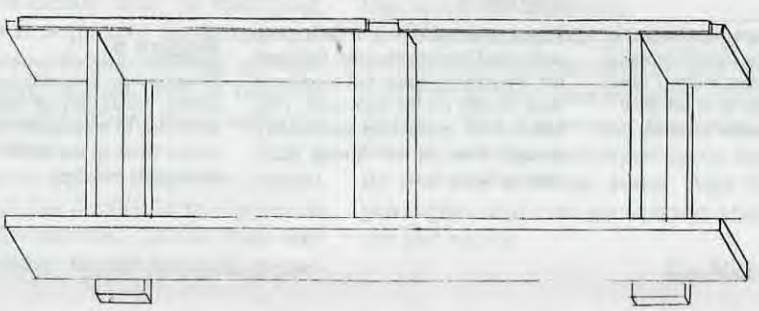
## Two-Colony Hive Stand

The Basis Of It All, by Bonney, March, *Bee Culture* was interesting. I've had all the problems that he mentioned and have modified the two colony hive stand as follows.

I use 2 x 6 treated lumber, which Bonney mentions, and add three more pieces. Two of the pieces are used as footers to lesson the sinking into the soft ground from the weight of two colonies with five or six Illinois supers. The other piece is added at the top of the long rails at the center. This forms an area to either set the smoker or the first frame removed from the colony. Two pieces of wood lath are added along the top of one rail with a gap between them at the center of the rail. This lets one use a level across the long rails and the lath raises the back of the hive for drainage. The complete assembly is held together with exterior use dry wall screws.

See sketch below.

Donald Cox



## Common Sense Is Rare

In 1936 I asked my father "What is common sense?" and he answered that "common sense is rare." Today I believe that common sense is on the endangered species list as being near extinction. Your comment in "Inner Cover" about anyone with a gram of common sense is well taken.

Your comments regarding "The Good, The Bad, And The Ugly" were not as appropriate. Whether the radio talk show host's statements or your comments were inflammatory or not is a personal opinion. My personal opinion is that your comment regarding his statements as inflammatory was itself inflammatory.

I personally would never wear one of his specialty ties unless I was working as a clown under an assumed name. His ties would be suitable for use on a scarecrow. I explained my "personal opinion" in detail regarding his ties to him in a letter last year. He didn't reply.

Fred G. Deer
Cary, NC

## Sour Source

I have found that if your bees are getting water from a source that you would rather they would not, you can stop them with a spray of one half vinegar and one half water. (I used cider vinegar.) Be sure to provide an alternate source of water.

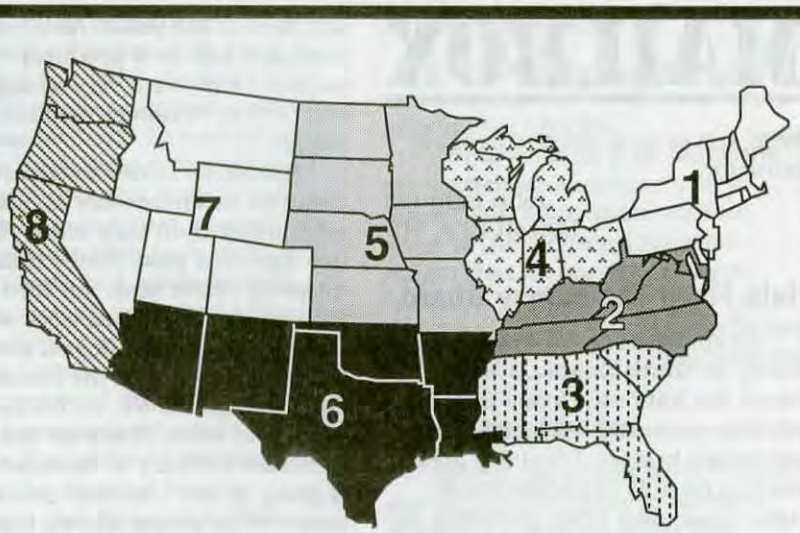
Robert McCarty
Sedalia, MO

# AUGUST Honey Report

## AUGUST 1, 1996

### 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 | 65.25 | 63.10 | 61.86 | 74.70 | 63.40 | 63.50 | 61.86 | 56.13 | 40.00-87.00 | 58.57 | 57.35 | 43.90 |
| 60# Amber | 64.19 | 56.81 | 59.57 | 74.70 | 66.40 | 55.33 | 59.57 | 54.73 | 35.00-87.00 | 56.71 | 55.40 | 41.80 |
| 55 gal. Light | 0.85 | 0.85 | 0.89 | 0.95 | 0.95 | 0.61 | 0.90 | 0.90 | 0.55-1.23 | 0.88 | 0.86 | 0.62 |
| 55 gal. Amber | 0.83 | 0.85 | 0.90 | 0.86 | 0.96 | 0.73 | 0.74 | 0.87 | 0.52-1.08 | 0.86 | 0.80 | 0.57 |
| **Wholesale - Case Lots** | | | | | | | | | | | | |
| 1/2# 24's | 25.98 | 31.63 | 22.80 | 23.28 | 23.28 | 25.50 | 28.69 | 27.50 | 22.50-36.40 | 27.17 | 27.50 | 23.55 |
| 1# 24's | 36.67 | 35.22 | 40.00 | 38.27 | 40.45 | 36.00 | 38.38 | 35.80 | 31.00-45.90 | 38.25 | 37.07 | 31.48 |
| 2# 12's | 33.16 | 33.06 | 36.80 | 37.84 | 36.00 | 30.00 | 36.38 | 31.00 | 27.60-46.80 | 34.73 | 34.74 | 29.50 |
| 12 oz. Plas. 24's | 32.95 | 31.50 | 35.00 | 35.07 | 31.32 | 36.00 | 35.93 | 30.00 | 27.60-45.90 | 34.28 | 32.58 | 26.55 |
| 5# 6's | 32.30 | 35.03 | 46.50 | 28.98 | 30.63 | 32.50 | 27.99 | 34.20 | 21.95-46.50 | 35.52 | 35.79 | 30.39 |
| **Retail Honey Prices** | | | | | | | | | | | | |
| 1/2# | 1.74 | 2.17 | 1.10 | 2.17 | 1.34 | 2.25 | 2.83 | 1.60 | 1.10-3.50 | 1.77 | 1.73 | 1.51 |
| 12 oz. Plastic | 1.99 | 2.10 | 2.00 | 2.21 | 1.76 | 1.95 | 2.07 | 1.99 | 1.50-2.64 | 2.07 | 1.98 | 1.65 |
| 1 lb. Glass | 2.42 | 2.75 | 3.18 | 2.36 | 2.19 | 2.32 | 2.66 | 2.41 | 1.89-3.60 | 2.50 | 2.40 | 1.90 |
| 2 lb. Glass | 3.75 | 4.32 | 3.93 | 3.87 | 3.33 | 3.50 | 3.93 | 3.69 | 2.97-4.79 | 4.02 | 4.01 | 3.17 |
| 3 lb. Glass | 4.71 | 4.88 | 6.50 | 5.03 | 4.81 | 4.50 | 5.03 | 5.07 | 3.50-6.50 | 5.08 | 5.28 | 4.33 |
| 4 lb. Glass | 6.16 | 6.75 | 7.13 | 7.13 | 7.13 | 6.25 | 7.13 | 7.13 | 6.25-8.15 | 6.98 | 6.16 | 5.40 |
| 5 lb. Glass | 7.86 | 7.78 | 8.41 | 8.48 | 8.19 | 6.82 | 8.41 | 8.00 | 5.89-10.99 | 8.34 | 7.92 | 7.02 |
| 1# Cream | 2.90 | 4.23 | 3.31 | 2.51 | 2.54 | 3.00 | 3.31 | 2.80 | 1.95-4.95 | 3.02 | 2.89 | 2.49 |
| 1# Comb | 3.33 | 3.60 | 3.38 | 3.41 | 2.50 | 4.25 | 3.38 | 3.50 | 1.95-4.55 | 3.65 | 3.74 | 3.34 |
| Round Plastic | 3.07 | 2.75 | 3.35 | 2.87 | 3.35 | 4.13 | 3.35 | 3.25 | 2.49-4.25 | 3.31 | 3.53 | 2.92 |
| Wax (Light) | 2.21 | 1.75 | 2.50 | 2.35 | 2.13 | 2.00 | 2.41 | 2.48 | 1.00-3.95 | 2.29 | 2.37 | 2.00 |
| Wax (Dark) | 1.89 | 1.50 | 1.80 | 1.77 | 2.07 | 1.57 | 2.07 | 2.30 | 1.00-3.25 | 1.97 | 1.94 | 1.51 |
| Poll. Fee/Col. | 31.71 | 31.67 | 30.00 | 32.50 | 33.26 | 31.00 | 35.00 | 28.50 | 31.00-55.00 | 33.79 | 33.66 | 32.63 |

### MARKET SHARE

Three activites dominate honey sales this and next month. First, get ready for National Honey Month. Take advantage of the promotional opportunities the National Honey Board has to spur sales. Second, the rather intense media attention honey bees have had lately has increased public awareness of honey, honey bees, beekeeping and pollination, and as a result demand for honey is increasing. Third, new crop honey always helps. Stress "Locally Produced," or be even more specific – "Medina County Honey" does better than "Ohio Honey" when your market is strictly local or even regional.

### *Region 1*

Honey prices stable to up a bit as new crop comes in. Demand slowing during warm weather, but still up compared to last year. Colonies that were protected last fall are doing well this year, with average to a bit above crops and strong populations.

### *Region 2*

Prices, demand and supply steady, steady, steady. New crop creating interest but still building steam. Colony conditions average to a bit slow – mostly due to erratic weather this spring.

### *Region 3*

Prices up, especially in the retail area as new crops hit the stands. Wholesale steady. Demand at retail high, and wholesale higher, but supplies only average. Colony conditions average to a bit slower than expected, most due to weird weather.

### *Region 4*

Prices up or stabilizing in the region, with retail leading the way. Demand not weakening much but summer's been mostly on the cool side. This has slowed production and colony strength some as new Spring packages build up slow.

### *Region 5*

Prices steady, demand for new crop just beginning to increase, supplies down with less than average crop. Weather has been miserable, mostly, but weak colonies and lots of packages have slowed production.

### *Region 6*

Prices up at wholesale bulk, steady at retail. Demand soft due to extreme heat and dry weather. Bees in fair to average condition, but drought areas not doing well. It's been move or feed this year. Supplies only average to a bit lower.

### *Region 7*

Prices and demand steady, but supplies down a bit yet before a patchy harvest begins. Pesticides, drought, cold and lost colonies haven't helped production.

### *Region 8*

Prices steady. Demand, supplies and colony conditions all strong in the north due to reasonable weather and crops; weak in the south due to unreasonable weather.

# New Reading

*Moose Don't Fly.* Dave Carlson. Planet Books, 3044 Saturn Ave., Eau Claire, WI 54703. Soft cover, 211 pgs., illustrated. ISBN 0-9649775-0-8 $12.95.

This book has nothing to with the art of keeping bees. But it has lots to do with why many people keep bees in the first place. Dave Carlson has a local T.V. show in Central Wisconsin where he hunts, fishes and does the general wildlife thing, in all parts of the U.S. and much of the world. He is a fisherman's fisherman, a hunter's hunter, and a true outsdoorsman. And he knows why, and how, and when to do what he does.

If you enjoy fishing, or hunting, or the world of wildlife, this is the best I can recommend. Catch and release fishing, children, dogs, spouses, old trucks and old friends are looked at, described and enjoyed.

I no longer hunt, though I used to do a bit, and fishing is too far away, anymore, to be as convenient as it was when I lived near a lake in Wisconsin. But it all comes back in little chunks and big pieces as I read through this book. It's fun, it's sad, it's happy, it's easy, and you'll enjoy every page.

Kim Flottum

*The immigrant bees 1788-1898: a cyclopaedia on the introduction of European honey bees into Australia and New Zealand.* Springwood, Australia; peter Barrett (1995) 200 pp. ISBN 0-646-25812-5

This is an account of the very earliest beekeeping history of Australia and New Zealand, based on extensive research into the available literature. It describes the earliest introductions of English or German 'black' bees (*Apis mellifera mellifera*) into New South Wales, Tasmania, Western Australia, and the North and South Islands of New Zealand. The period involved was 1788-1842, although the first undisputed successful introduction of honey bees into Australasia appears to have occurred in 1822, from the ship 'Isabella.' The subsequent introduction of Italian bees (*A. m. ligustica*) into New South Wales, Tasmania, South Australia (Kangaroo Island) and New Zealand in the period 1862-1880 is also described, and methods of transporting bees by sea during the period from the 1820s to the 1890s are discussed. Once established in Australia and New Zealand, bees were transported by land and accounts of such movements in the period 1827-1870 are given.

D.G. Lowe

*Bumble Bees For Pleasure and Profit.* Edited by Andrew Matheson. Published by IBRA, 18 N. Rd., Cardiff, U.K. CF1 3DY 1996, 47 pg. soft cover. ISBN 0860982211 £8.00 (cc accepted).

Bumble bees are special, says one of contributors to this book. That's a good assessment of this large fuzzy bee. By themselves, bumble bees are fun to watch, and can offer much to the education of children in the areas of entomology and pollination. This book does that, too.

But the commercial value is what's most interesting. They have been raised and used in the horticulture and greenhouse industry for only the last eight years or so, but their popularity is growing. So is the business of producing them.

Although this book doesn't give the secrets of queen and colony production (the references do, though), the basics are outlined, and useful.

Beekeepers who are in the pollination business, will, in the not-to-distant future need to know this industry. This book is a good start.

Kim Flottum

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*Fields Without Dreams.* Victor Davis Hanson. 289 pg. Hard Cover. ISBN 0-684-82299-7, $23.00.

This is a book about what's happening, and what's happened to the family farm in America. Set in California's San Joaquin Valley, Hanson's family started growing grapes to turn to raisins four generations before he came to be.

But Hanson's farm, along with America's family farm is changing, and with it a part of American culture. Hanson is also a Greek scholar at a nearby college, and is familiar with Virgil and other classic agrarian philosophers.

Hanson argues that the quaint notions of the family farm – seen on T.V. and in movies – is less than correct. Farmers, family farmers, persevere, suffer, have faith and some basic instincts, but are significantly different than the corrupt routines of urban contemporary life.

He uses example from the history of his family's farm founding, conquering the land, establishment, government intervention and 'global market' clashes.

But the family farm – the agrarian idea – is central to the virtues that shaped America – and are a disappearing American tradition.

If a commercial beekeeping operation was substituted for this vine and fruit grower most people wouldn't notice. The American beekeeping family, and the American farm family are one and the same. And the principles and virtues written about are the same.

Kim Flottum

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*The Forgotten Pollinators* (Shearwater Books/Island press, July 1996, 292 pages, $25.00), Dr. Stephen Buchmann, Dr. Gary Nabhan.

More than 30 years ago, Rachel Carson gave birth to the modern environmental movement with her classic book *Silent Spring.* Among other dangers, she warned of a time 'when there was no pollination and there would be no fruit."

Three decades later, and with little public notice, Carson's prescient warning is coming to pass. Thousands of insects and other animal pollinators are being threatened by an unprecedented combination of land development, habitat loss, pesticides and pollution. Today, at least 180 vertebrate pollinators – birds, bats and small mammals – face extinction, and thousands of insect species are at risk as well.

Massive agricultural, forestry, mining, industrial and residential development of formerly wild lands have broken up natural pollinator habitats into isolated patches, forcing them to abandon areas that no longer offer sufficient sustenance. This habitat fragmentation has a pre-

*Continued on Page 492*

Roger Morse

# Research Review

"Increasing world honey production, which will lower prices, will not happen overnight. Here's why."

During the past year, we have seen the wholesale price of honey double. I believe prices will remain high for several years for the reasons discussed below. To determine how long honey prices will remain at the current level, it is helpful to review a little history and also some facts about the beekeeping industry.

During the second World War, the wholesale price of honey was fixed by the government at 12 cents per pound. The retail price was not controlled, and beekeepers who sold their own honey at retail, or who were members of cooperatives, could sell their honey at whatever price the market would support.

However, the important point is that the wholesale price remained much the same from 1941 though most of 1971; there was, however, a serious dip in the price for a few years immediately after the war. Between 1950 and 1971, a large number of beekeepers around the world went out of business because the price of honey did not keep pace with inflation. In the Fall of 1971, there was a world shortage of honey and we saw then what is happening again today – the wholesale price doubled. However, it went up again the following year, causing one to wonder what will happen this coming year.

For all practical purposes, the price of honey has remained much the same from 1974 through the Summer of 1995 – a period of 21 years. During this time, the price of honey did not keep pace with inflation, and as a result, many more beekeepers went out of business. If you examine the price of honey from 1941 to the present, you realize that the current price is not exorbitant, especially when compared to other products.

## The future

No doubt beekeeping will become a more popular vocation and avocation because of the higher honey prices. As a result of higher prices, we can expect many new beekeepers. We can expect, too, that many in the business will expand their operations. However, our knowledge of bee behavior, honey plants and beekeeping methods suggests that it will be several years before production around the world will increase dramatically. Some of the important considerations are discussed below.

It takes time to find locations, build equipment, draw foundation and grow honey bees. Finding good apiary sites may be one of the more difficult items. Beekeepers do not plant flowers for honey production. Rather they move their bees to those areas where honey plants are present. We know where the best honey-producing areas in the world are located, and no doubt these will soon be filled with colonies. After that the only honey-producing areas that will be left will be secondary insofar as honey plants are concerned. There is no way to plant more honey plants and to increase production in the same manner that we plant more corn, wheat and other crops.

Managing colonies for maximum production is an art that is not easily learned. There have been several studies that reinforce the fact that annual requeening is helpful, as young queens produce more eggs and head colonies that are less likely to swarm. Requeening colonies is slow, tedious work that can be done only by experienced beekeepers. It takes time for a newcomer to learn how to requeen successfully.

Honey bee diseases continue to plague us. U. S. honey production will probably be less this Summer because of the serious Winter losses in the Northern states in 1995-1996. These losses were disease related. The serious diseases of honey bees can be controlled, but at a cost in money and labor that is higher than in the past. Migratory beekeepers who go to the Southern states will have an easier time of controlling diseases than those who stay in the North.

In conclusion, it appears to me that the price of honey is stable and will continue at the present level for several years for the reasons stated above – basically, it takes time and capital to expand operations and for newcomers to begin and learn successful and profitable management techniques.

## More history

It has been only since the 1920s that the federal government has had an official honey price reporting service, so earlier figures are only guesses. From the start of the commercial beekeeping industry in about 1870 and until about 1900 or 1910, American beekeepers reported that the price of a pound of butter and a pound of honey were about equal. That changed in the early part of this century as the production of sugar increased, and the price of all sweets decreased. The low point in honey prices during the past 125 years came in 1933 and 1934. I remember that in 1933, my father, who had only about 30 colonies, was offered one cent a pound for his honey; he finally sold that crop for four cents a pound, but he had to pay about a penny a pound for the containers. The situation has been much improved since that time. BC

# ? DO YOU KNOW ?

## *From Hive To Bottle*

Clarence Collison

Removing, extracting, handling, and processing the honey crop can be a challenging task, especially for a hobby beekeeper. No matter how well the beekeeper may have managed your hives, honey bees are not enthusiastic about giving up their honey crop. You should be well protected from the defensiveness of the bees. The approach used to "rob" the hives will depend on the number of colonies and amount of honey produced. Removing honey from the combs is also a challenge for the hobbyist since there is no simple, neat and inexpensive way of doing it. Regardless of the size of your operation, at all stages of handling the honey crop, you must be concerned with producing a final product of highest quality.

How well do you understand honey production, extracting, handling and processing? Please take a few minutes and answer the following questions to determine how well you understand these important topics.

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

1. ___ Creamed honey should have a texture similar to that of butter.
2. ___ The removal of bees from honey supers with bee escapes works best on cool nights.
3. ___ Butyric anhydride (Bee Go) works as a bee repellent at lower temperatures than benzaldehyde (oil of almond).
4. ___ Honey that is slow to granulate results in creamed or finely crystallized honey.
5. ___ Honey used in the production of creamed honey should have a moisture content of 17.5-18%.
6. ___ Bacteria is unable to grow in honey.
7. ___ Creamed honey stored under warm conditions may revert to liquid state.

Multiple Choice Questions (1 point each).

8. ___ Yeasts that cause honey to ferment will not grow at temperatures below:
   A) 52° F
   B) 60° F
   C) 45° F
   D) 70° F
   E) 55° F
9. ___ The only fumigant recommended for wax moth control in comb honey for human consumption is _____.
   A) Paradichlorobenzene
   B) Naphthalene
   C) Methyl Bromide
   D) Carbon Dioxide
   E) Ethylene dibromide
10. How can you tell when honey is fully-ripened and ready to extract from the comb? (1 point).
11. Describe two ways in which automatic uncapping machines remove the capping from the comb. (2 points).
12. Give two reasons why it is often important to remove honey from the hive when it is fully ripened. (2 points).
13. Name 1 advantage and 3 disadvantages in using bee escapes to remove bees from honey supers. (4 points).
14. Why is it desirable to warm honey prior to extraction? (2 points).
15. Give two reasons why honey is heated following extraction. (2 points).
16. Name one plant that produces toxic nectar. (1 point).
17. What is diatomaceous earth used for in commercial bottling operations? (1 point).
18. Honey in storage over a long period of time will decline in quality. Name one way in which honey changes while it is kept in storage. (1 point).

ANSWERS ON PAGE 481

Mark Winston

# It's Payback Time Again

"The most fundamental researcher in theoretical physics as well as the most applied researcher in bee management should both be ready, willing and able to justify the funding they receive."

I rarely go back to an old article I've written, but I was stimulated to re-read my April 1995 *Bee Culture* article "Payback Time" by a guest editorial that appeared in the March 1996 issue discussing whether basic research is important. This editorial was written by a physics professor who also keeps bees, and his main point was that somebody has to do the basic work first that leads to the applications. I wholeheartedly agree, but he discussed my "Payback Time" article as if I had undervalued the fundamental research that leads to payback, so I thought I had better go back and see what I wrote.

In "Payback Time," I discussed the worth of my own research, and attempted to put its value into economic terms. I chose three projects conducted in my laboratory over the last 15 years, and calculated how much each project cost and the economic benefits for beekeeping or pollination that resulted. My major point was that society funds my and other scientific work, and we as scientists should be obligated to convince any taxpayer that our work is worth the tax dollars spent on it. To me, that point is the same whether we're talking about basic or applied work. The most fundamental researcher in theoretical physics as well as the most applied researcher in bee management should both be ready, willing, and able to justify the funding they receive.

This article was published in *Bee Culture* and reprinted by a number of in-house university newspapers. It elicited a considerable response from both outlets. To my surprise, most of my academic colleagues were enthusiastic, and some did go through the exercise of determining just how much value society had gotten from their research. I did, however, receive two types of negative comments. The first came from only one individual, a member of Canada's Parliament. He wrote to tell me that if my research was so economically significant to beekeepers, then it should be fully funded by beekeepers. He didn't believe that any tax money should go into research to benefit private enterprise. I found that to be an interesting perspective, but fortunately this Member of Parliament is in the Opposition party currently out of power, and so has little influence in the Canadian parliamentary system.

The second type of comment was similar to that expressed in the March *Bee Culture* guest editorial, and was communicated to me in numerous e-mail messages, phone calls and letters to the editors of the university newspapers. This perspective pointed out that none of the work I presented would have been possible without earlier, fundamental research, and that those who do applied work need to recognize the value of the basic work leading to those applications.

I agree, and realized that my use of applied examples was too narrow. A better approach to determine payback would be to examine a fuller spectrum of basic to applied studies. Unfortunately, our publishing system discourages the cross-fertilization of basic and applied science, because academic work tends to be published in academic journals and applied work in trade journals, with little cross-over. For example, my students and I publish our fundamental findings in a range of journals such as *Behavioral Ecology and Sociobiology, Nature, Science, Canadian Entomologist*, and the *Annals of the Entomological Society of America*. These publications rarely, if ever, discuss the commercial implications or even the potential of that basic work, and so

*"I remain unabashedly critical of any scientist who does not take the time to explain the value of his or her studies to relevant commodity groups and general public audiences. Whether we study bee theory or managment, each of us funded at the public trough has the obligation to convince taxpayers that our research has value to them."*

the academic scientific community doesn't see that side of what we do.

In contrast, the applied part of our research gets published in beekeeper and grower journals such as *Bee Culture, The American Bee Journal, Good Fruit Grower, Bee World* and various provincial and state newsletters. These articles discuss beekeeping and pollination applications we have studied, but rarely go into the fundamental background research that led to those applications.

The lectures my students and I give to public, university, beekeeper and grower audiences tend to be more balanced. For example, I present the same lecture about our queen pheromone work to each of these groups. The first half of this lecture discusses basic aspects of pheromone biology, and the second half goes into applications of queen pheromone for beekeeping and crop pollination. The academic audiences benefit by discovering how basic work can lead to useful commercial applications, and the beekeeper, grower and public audiences get a better comprehension of how and why pheromones can be used commercially by understanding the biology behind the management.

The responses I received to "Payback Time" made me think again about how we communicate, and I realized that we still separate the basic and applied aspects of research in our written presentations. I thought it might be interesting to look at one of the applied research topics I discussed in that article again, but this time describing the kind of fundamental work that led to that commercial application.

The first study described in "Payback Time" involved demonstrating that package bee production was feasible in Canada. However, that project did not begin with that objective, but rather grew out of an academic interest in studying theoretical hypotheses concerning why bees did particular tasks at certain ages. We conducted a study in the early 1980s to test the hypothesis that bees essentially are lazy, and normally do not work up to full labor capacity. Rather, they spend a considerable amount of time resting, and live relatively long lives, unless the colony is stressed. When pressured, however, we thought bees might change their work habits to work harder and overcome the problem, but the trade-off might be that they die younger.

We decided to challenge colonies by reducing their worker populations in the Spring by 50 to 75 per cent. We then compared worker life span and colony function in the partly depopulated colonies to control colonies that had no workers removed. The result was that workers remaining in the depopulated colonies foraged earlier, worked harder, and died younger, as predicted. The most interesting finding, however, came at the end of the season, when we discovered that the stressed colonies had identical worker populations, honey production, brood area, and stored pollen. We concluded that worker bees normally retain potential to work that only gets expressed under stress situations. The effect of their increased work when challenged is that individual bees die at younger ages. For the colony, however, the extra work performed allows colonies to rebound.

This research took place during a period when Canadian beekeepers were becoming more interested in self-sufficiency. Many of us could see the day coming when we would no longer be able to import bees from the continental United States because of the arrival of Africanized bees, although when the border was closed in 1988, it was due to mites, not killer bees. Most of that research toward self-sufficiency involved improved overwintering and queen production methods for Canadian conditions, but we also recognized that some package bees and nuclei would still be needed in the Spring to replace Winter losses and initiate new colonies.

It occurred to me at the time that our stress experiments were identical to what we do when producing packages. If we could shake four to six pounds of bees from colonies in the Spring, yet have those colonies rebound by the end of our short Canadian Summer, then a package bee industry in southwestern Canada might be feasible. Thus, our basic stress experiments indicated a biological phenomenon, lazy bees, that could be exploited for potential success in a commercial setting.

We went ahead and studied package bee production directly, and demonstrated that colonies from which packages were shaken in the Spring did indeed rebound, and were identical to non-package – producing colonies by August. Thus, we determined that bee production was biologically and economically feasible in British Columbia, and that industry is now a growing and viable one here in our province. However, the work began with a basic study, and the package project never would have happened without the fundamental research that preceded it.

I hope this example provides some idea of how basic and applied work can blend seamlessly into unlabeled science. I have never appreciated this distinction we make between basic and applied research. Rather, I see good science and bad science, and recognize the importance fundamental studies have in leading to applications, and applied work has to stimulate basic studies.

Nevertheless, I remain unabashedly critical of any scientist who does not take the time to explain the value of his or her studies to relevant commodity groups and general public audiences. Whether we study bee theory or management, each of us funded at the public trough has the obligation to convince taxpayers that our research has value to them. I have observed that scientists doing more fundamental work are less forthcoming about explaining the value of their work to anyone but their colleagues. Their research may be worthwhile, and may lead to tangible benefits, but the value of their studies is meaningless if it does not get transmitted and explained to the public that paid for it.

I would ask any scientist how often he or she has done a newspaper or radio interview about his or her work, talked to an audience made up of people from all walks of life rather than only to other scientists, or gone into an elementary school class to explain his or her research. If the answer is rarely or never, something is seriously wrong, and it doesn't matter to me what kind of research that scientist performs. BC

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

# CHALKBROOD
## Definitely A Stress Disease

Kim Flottum

Chalkbrood, a fungus disease attacking honey bee larvae, has been in the U.S. since the mid- to late 1960s. During its 30 or so year stay it has caused problems ranging from barely noticeable to major epidemics in some areas, in some years. This year bordered on the epidemic in many areas, especially the northern two-thirds of the country.

Like most fungi, chalkbrood produces spores for reproduction. Spores are transferred to previously uninfested colonies by drifting bees, using contaminated tools, or contaminated comb transfer. Once spores are in a colony, they come in contact with 3-4 day-old larvae by being fed to them, or clinging to cell walls. After being sealed in the cells, if the larvae are chilled in the next two days, even briefly, the spores germinate and begin growing when the temperature increases again. They germinate in the gut, or on the larvae's surface, and begin feeding (surface germinating spores work their way into the larvae's gut). Once growing the fungus feeds on the same food as the larvae and out-competes them. The larvae starve to death.

When the larvae die the fungus continues to grow, causing the larvae's very white corpse to swell and fill the cell completely. When all the food reserves are consumed, larvae dry and shrink and become hard, white, chalklike "mummies." Severe infections result in many larvae dying and drying in their capped cells and when a frame is shaken a rattling can be heard.

Chilling the larvae occurs when there are not enough bees to maintain brood nest temperature, especially during erratic spring weather. Swarming can lead to too few bees also.

If the fungus has enough food and good growing conditions it will produce fruiting bodies (which in time produce reproductive spores) that are gray, dark gray or black. Spores produced on mummies are picked up by cleaning bees and moved throughout the colony, or are left on the cell wall. Either way, when conditions are right they germinate and reinfect more larvae. Spores can remain viable for at least 15 years.

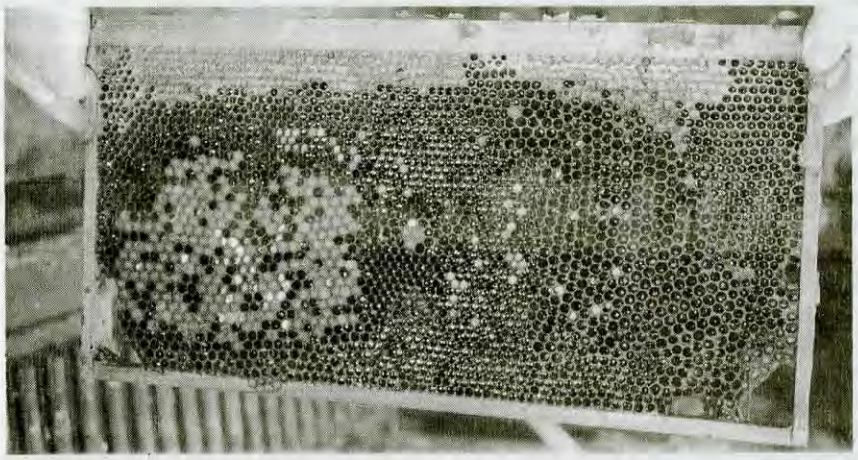
There is no chemical control for chalkbrood. Destroying infected combs, running equipment through an ETO chamber, and fostering genetic lines of bees with both hygienic behaviors (uncapping cells and removing diseased larvae) all help. Requeening with stock shown to be resistant to the disease may help. Requeening also breaks the brood cycle enabling the colony to clean up diseased cells.

Generally, reducing or avoiding stress on a colony (weather, internal moisture accumulation, adult bee population, temperature fluctuations, swarming, other diseases and pests), keeping the pathogen load low (removing infected frames), and maintaining strong colonies with good nutritional levels will keep chalkbrood at bay.

Chalkbrood, out of control, can, when coupled with other problems kill a colony. Don't take this disease for granted and act accordingly to prevent it from occurring or to decrease its levels in your colonies. BC

This article was excerpted from *Pests, Predators and Diseases Third Edition*, Chapter 5, by Martha Gilliam and John Vandenberg. The Third Edition will be released in early 1997.

*When still in the cells, chalkbrood infected larvae swell to fill the entire cell. These drone larvae were on the edge of the brood nest and became chilled.*



*Once dried out, "mummies" are removed and can be seen on the ground outside the colony.*

# HONEY JUDGING

Richard Bonney

Most beekeepers judge honey regularly, although in a very casual way. Inspecting a freshly filled frame from an extracting super, tasting the output from an extractor, sampling a newly opened jar or a section of comb honey – all of these are ways in which we test and judge honey. Entering honey shows, analyzing our wins and losses, and observing other entries all add to our store of knowledge. At some point, all of this information begins to come together, perhaps coupled with a need for a judge at a local honey show, and an individual begins to think – why not me?

The next step for this person is to apprentice with an experienced judge and participate in at least one or two honey shows on that basis. To supplement such an apprenticeship, or in the event that one is not possible, the following information is offered for the aspiring honey judge.

### QUESTIONS TO ASK

Assuming that you have been asked to judge a honey show, your initial step is information gathering. Obtain a copy of the premium list or book and the judging forms (score sheets). Go over both carefully. Study the score sheets and come to an understanding of what is meant by each line. Then meet with the show chairman or other individuals to determine the following:

- Are you expected to judge anything other than honey – wax, gadgets or honey cookery, for instance? Wax is often included routinely as part of a honey judge's responsibility; cookery and gadgets are apt to be separate.
- How much time is allowed? Judging can be very time-consuming.
- How many entries are there normally? Has there been a trend toward more or fewer entries in recent years? This information helps in estimating time required.
- Is a helper provided? If none is provided, especially for the larger shows, you may want to arrange for one.
- What are the facilities in which you will work? Are they adequate?
- Who places entries in classes? It may be the entrant, the judge, or a person assigned to receive entries. If someone other than the judge does this, may the judge, prior to the actual judging, rearrange the entries into more appropriate classes? (This can create problems if one person has entries in two classes that are combined.)
- Who provides the refractometer, polariscope (if used) and the judging forms?
- Do the fair or show personnel who are *receiving* the entries know how to handle them properly? That is, no tipping of jars to watch the bubble, no opening to taste the honey, no excess handling so as to finger mark the jars, and so on.

### EQUIPMENT

An individual who judges or expects to judge regularly will do well to own a set of the tools of the trade, or at least know where such equipment can be borrowed. These tools include a refractometer for checking the moisture content of the honey and a polariscope for inspecting extracted honey for impurities and granulation. Some beekeeper organizations own one or both of these, and will loan them to qualified judges. A few beekeepers own them, as well, and may be willing to lend. Ask around.

Other equipment includes:

- A supply of toothpicks or something similar for dipping small quantities of honey from jars for tasting and for loading the refractometer.
- Cleanup materials such as a container of water and a supply of tissues. Invariably, there will be a little stickiness to clean up from improperly prepared entries, and honey must be removed from the refractometer after each sample is checked. Don't count on running water at the judging site.
- Forms (score sheets) – normally provided by the sponsoring organization.
- A scale for weighing comb honey entries (or beeswax if you are judging it as well), if weight is mentioned as a qualifier for any of the categories.

### FACILITIES

Facilities for honey shows are as varied as the number of shows. Find out as much as possible about the site.

- Can the area be closed off from the public, from show entrants and from other interested beekeepers during the actual judging? This should be an absolute requirement, but it does not always happen.
- Is there counter space or a table on which to spread out equipment and entries during the judging?
- If there is more than one judge – wax, baked goods or gadgets, for instance – is there plenty of room for all to work simultaneously?

### GENERAL CONSIDERATIONS

- Every aspiring judge should enter at least one, but preferably several honey shows before becoming a judge.
- If there is a beekeepers' association or other group

involved, the exact nature of their help must be clear. Do they have traditional duties that they will automatically carry out, or will they be looking to you for direction?

- Have your procedures and intentions well in mind before you arrive at the judging site and lay it all out for your helpers as a first step. Be prepared to take charge.
- If more than one refractometer is being used, be sure to calibrate them before-hand.
- After it is all over, perhaps there are recommendations you can make for changes for the future – either to the fair authorities or to the sponsoring beekeeper organization. However, don't be presumptuous. Go slowly if this is your first experience as a judge.

Possible changes to be considered:

- Are the numbers of entries realistic? For instance, are there enough or perhaps too many color classes, or are there enough comb classes, so that, for instance, round combs are not being judged against cut comb?
- Is the number of containers per entry appropriate?
- Are containers standardized, such as queenline, or others?
- Could the fair be doing anything else to stimulate beekeeper interest? Could you suggest sources for additional or increased awards?
- Is the premium book clear on its requirements?

## THE JUDGING PROCESS

During the judging, be consistent from entry to entry. Don't allow yourself to become bored or jaded as you work through a large number of entries. Apply the same objective judgment to every entry in the show.

Use modern practices. In particular, timing the rise of the bubble in a jar of honey is not a reliable or accurate method of estimating moisture content. If no refractometer is available, the category should be de-emphasized. Color also should be de-emphasized. Light honey is not inherently better than dark honey, in spite of a common belief to the contrary.

The judge should exaggerate those things that a honey customer looks for when purchasing honey – cleanliness, attractiveness, uniformity, clarity, and so on. These also happen to be the areas where the beekeeper has the greatest control.

Some specific considerations are . . .

- ***The container, including the lid.*** The jar should be carefully selected, be clean, with no imperfections in the glass and no chips in the rim. Lids should have no dirt ground into the knurling, and, if they are metal, should have no chips or scratches in the paint.
- ***Cleanliness of the honey.*** Impurities often show up on the inside of the lid. Tilt *one* of the jars on its side momentarily. The resulting film of honey on the inside of the lid will show dirt readily. Reflected light on the surface of the honey will also make dirt show

*Continued on Next Page*

*Score cards will vary from show to show, but the basics are the same. Have an understanding of each line of each class well before the judging process starts.*

ANY BEEKEEPING SOCIETY
Judge's Score Card

Event: EXTRACTED HONEY Class: _____ Entry no. _____

| Point Scoring | | Item | Judge's Remarks |
|---|---|---|---|
| 20 | | Density (moisture content)<br>Above 18.5 or below 15.5 disqualified | |
| 10 | | Absence of crystals | |
| 30 | | Cleanliness: absence of<br>a. lint ( 7)<br>b. dirt (10)<br>c. wax ( 7)<br>d. foam ( 6) | |
| 30 | | Flavor (points are reduced for flavor adversely affected by processing) | |
| 10 | | Container appearance - jar and lid (glass quality, cleanliness, fill level) | |
| 100 | | | Award: _____ |

ANY BEEKEEPING SOCIETY
Judge's Score Card

Event: CREAMED HONEY Class: _____ Entry no. _____

| Point Scoring | | Item | Judge's Remarks |
|---|---|---|---|
| 30 | | Fineness of crystals | |
| 25 | | Uniformity and firmness | |
| 15 | | Cleanliness and freedom from foam | |
| 20 | | Flavor (absence of off flavor from overheating or fermentation) | |
| 10 | | Accuracy of filling, uniformity of entry | |
| 100 | | | Award: _____ |

ANY BEEKEEPING SOCIETY
Judge's Score Card

Event: COMB HONEY Class: _____ Entry no. _____

| Point Scoring | | Item | Judge's Remarks |
|---|---|---|---|
| 20 | | Uniformity of appearance | |
| 15 | | Uniformity of color | |
| 20 | | Absence of watery cappings, uncapped cells, and pollen | |
| 15 | | Cleanliness and absence of travel stain | |
| 10 | | Absence of granulation | |
| 10 | | Uniform weight of each section | |
| 10 | | Total weight of entry | |
| 100 | | | Award: _____ |

ANY BEEKEEPING SOCIETY
Judge's Score Card

Event: CUT COMB HONEY Class: _____ Entry no. _____

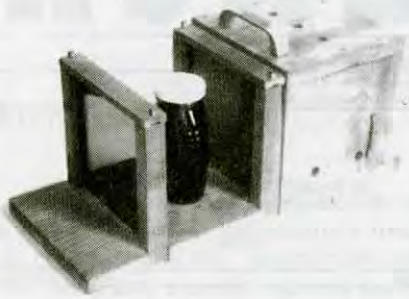
| Point Scoring | | Item<br>Judge's Remarks |
|---|---|---|
| 20 | | Neatness and uniformity of cut, absence of liquid honey |
| 20 | | Absence of watery cappings, uncapped cells, and pollen |
| 20 | | Cleanliness of products, absence of travel stain, crushed wax, and crystallization |
| 15 | | Uniformity of appearance (color of honey, capping structure, thickness of combs) |
| 15 | | Uniformity of weight |
| 10 | | Total weight of entry |
| 100 | | Award: _____ |

ANY BEEKEEPING SOCIETY
Judge's Score Card

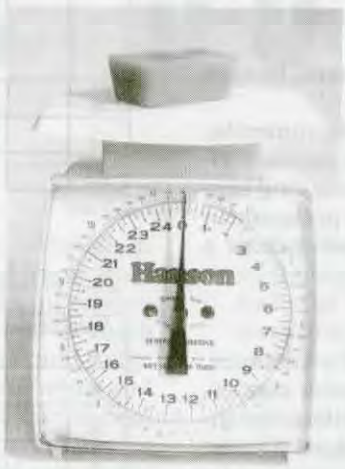
Event: BEESWAX Class: _____ Entry no. _____

| Point Scoring | | Item | Judge's Remarks |
|---|---|---|---|
| 30 | | Cleanliness | |
| 30 | | Color and aroma | |
| 20 | | Uniformity of appearance | |
| 20 | | Absence of cracks and shrinkage | |
| 100 | | | Award: _____ |

# Tools Of The Trade . . .



*A Polariscope*




*A simple scale*

*A Refractometer*

up. Do this only after you have removed the lid and inspected it inside and out.

- ***Fill level.*** Each entry should be filled to the proper level, not too much, not too little. A jar that is too full is likely to slop over when opened, either on the consumer, or worse, on the judge. A jar that is under-filled is cheating the consumer. Headroom should be about 3/8 to 1/2 inch, and there should be no visible gap between the honey level and the bottom of the cap.
- ***Clarity***. Extracted honey should be sparkling clear. In addition to being free of dirt, lint, wax or any other impurities, there should be no cloudiness from minute air bubbles, nor should there be any traces of incipient granulation.
- ***Flavor***. Be very careful here. The preferences and perceptions of individuals vary. Points should not be taken off simply because a judge does not like that particular flavor. However, burnt or otherwise improper flavors resulting from improper processing should be penalized or disqualified. Points also should be taken off for a flavor that is not market-

## Moisture Tester

Several years ago, I ordered one of the Swedish honey moisture testers that were at that time advertised regularly in beekeeping magazines. This tester was, as advertised, a small glass hydrometer, and in use, it is floated directly in the honey to be tested. It had been described to me by a knowledgeable beekeeper as being of little practical value, but I wanted to see for myself. I thought that perhaps it would be of some value to someone who just wanted an occasional moisture reading. I agree. It was not of much value.

I used mine to test a sample of honey and got a reading of about 18.2. The scale on the tester is small and consequently difficult to read with accuracy, even ignoring the meniscus. The actual reading could have been two-tenths higher or lower. Furthermore, it took several minutes for the tester to find its level in the jar of room-temperature honey. Perhaps the biggest problem, though, is accuracy. I have two other moisture testers available, both conventional refractometers as are used at honey shows. Both of these gave a reading of 16.4 for this same jar of honey.

Perhaps a larger hydrometer would give more accuracy, but larger size is in itself a problem. It could be used for bulk quantities of honey, but it would not be practical in a honey show because, aside from the time factor, it would not fit readily into a jar of honey.

*Sometimes clean honey isn't as clean as you thought. A Polariscope is needed to see the problems. (P.K. Visscher photo)*

able, even if that flavor is natural – privet for instance.

- ***Uniformity***. Both the containers and the contents of both elements in an entry (assuming two jars, two combs, etc.) should be identical in all respects.
- ***Density***. The value of density (moisture content) as a criteria for judging honey is debatable, once you have determined that the honey falls within an acceptable range. At least two schools of thought prevail. One school believes that if moisture content falls below 18.6 percent and above 15 percent, full points are to be awarded. The other school believes that the moisture content is controllable and that points should be deducted as the percent rises or falls from an ideal. A simple version of this is to accept 16.0 to 16.9 as a desirable range and award full points to a reading in that range. From 17.0 to 17.9 would lose one point, and 18.0 to 18.5 would lose two points. Below 16.0 is considered unnaturally low and loses one point. In each instance here, the judge could elect to take off more than one point. But honey produced in some arid areas naturally is lower, so take geography into consideration.
- In awarding points in other categories, be sure you create enough spread. For instance, don't hesitate to take off several points for a fault. Beware of a tendency to take off too few points for a given fault. If while judging an entry early in the session, you take off only one or two points for several strands of lint, then what do you take off from a later entry that has only a single strand? An approach to this is – take off a set number of points (say three) for the existence of a particular fault – lint, for instance – and then take off an additional point for each piece of lint detected. The set number of points should be determined beforehand and would be in proportion to the total number of points for the category. Perhaps the set number for dirt is more than that for lint because you consider dirt to be a more serious fault. Have your system well in mind before you start. Better, have it written down so you can refer to it when things get hectic.

## BEESWAX

Many of the foregoing comments about judging honey apply also to judging beeswax, but obviously there are other considerations.

What is being judged is first, the ability of the entrant to select and process appropriate wax, and second, to form that wax into suitable entries. Any entry, no matter whether it be candles, a novelty item or simply a block of wax, should be judged first as wax, then for its form.

*Few things in beekeeping are more appealing than a perfect frame – and a blue ribbon to go with it.*

- ***Cleanliness***. This refers both to the purity of the wax and the condition of the entry. Poorly cleaned (filtered) wax may have either minute specks or gross inclusions of embedded dirt and debris. Poorly protected wax can pick up smudges, stains and just plain dirt during storage and transportation. Furthermore, wax should not be sticky from residual honey.
- ***Color***. With wax, color is important. Light wax is better than dark wax, since darkness indicates the presence of impurities. The ideal is the so-called lemon yellow. Aged wax loses its sparkle, and when it is too old, may take on a grayish tinge.
- ***Cracks and shrinkage.*** These are controllable, as is the uniform appearance of the entire casting or molding. A smooth, blemish-free entry shows that the competitor was in control of the process.

## CONCLUSION

As you become experienced and proficient at judging, consider taking on an apprentice. Good judges are in short supply, and sometimes inexperienced individuals step into the breach. Though well intentioned, they may not know enough and the show may suffer. BC

*Richard Bonney is an Extension Educator for the state of Massachusetts. He is a regular contributor to these pages.*

# *Selling Honey . . .*
# HOME STYLE

Howard Scott

It's easy to sell honey out the back door and make a little revenue from your hobby. Just tell family and friends you're selling fresh, local, unprocessed honey, and have stock on hand when they come to call.

But if you want to do better than make a little spare change, here are several ideas that may improve your sales. Some of these ideas might work for you. Some might not. Others will stimulate your thinking. The point is, simply having stock for sale will not result in any more than a trickle, even if your honey is excellent quality.

**Signs.** As a starter, put up a sign. The sign should be small, clear, distinct. Hang it on a post, close to the road, at eye level. Paint it a color that stands out. If there are yellow newspaper boxes along the street, then choose a contrasting color – green, for instance, or black. If yellow doesn't predominate, then yellow is a natural choice. Make its shape distinctive – say a skep or a honey pot – so that the passing motorist sees it. Avoid wordiness. Say the essential. "Honey sold here," "honey for sale," or "fresh honey here," will do. If you offer specialties, hang smaller signs on a chain down from your honey signs stating those specialties. For instance, one bar might say, "pound or bulk." Another might say, "chunk honey," and a third might say "beeswax." If possible, have the words on both sides, not just one.

Some towns have restrictions on signs. You might discretely inquire first or you might simply put up a sign, and feign ignorance if called to task. As a general rule, if your sign is small and unobtrusive, no one will bother you.

Taken another step, consider two signs – one facing both directions. Place them far enough away such that a motorist has time to react.

**Set up a stand.** This is the second step towards becoming a better merchant. Make the purchase as easy as possible. The stand contains clean jars, different amounts, a change box, and a price list. If you don't want to use a change box, a tin can with a rock sitting in it will do. With the rock, buyers can leave bills without worrying that their money will blow away. The stand can be as simple as a two-


or three-shelf bookcase inside the porch door, to as ornate as a booth, with a counter and shelves outside. I have seen all kinds of stands, from unplugged refrigerators to shoe boxes on folding tables to step-in stands with awnings and a gigantic hand-carved wooden bee on top. The more elaborate the stand is though, the more signage you'll need. Larger, farther away and easy to read at road speed.

One excellent but simple honey stand I've seen was a four-tier shelf unit that sat on a thick tree stump. The unit was hand-made, probably durable oak, and heavily lacquered with polyurethane. It was very attractive, and I'm sure that brought extra honey sales.

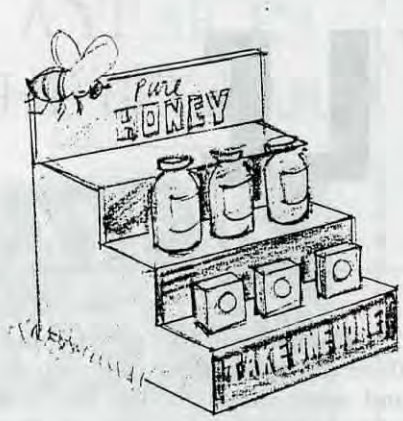
What about theft? Obviously there are some areas where change and stock cannot be left out. However, few beekeepers live in those places. A random survey of beekeepers who keep outdoor stands reveal that they do not have vandalism and theft. Eighty percent said, "They've never had a problem."

As a precaution, keep only small amounts of money in the change box, check a few times during the day if possible, both cash and stock, and bring in merchandise, or close up the stand at night. Control stock by keeping a card of inventory on the side or back of the stand. Routinely reconcile stock balance to cash balance. In other words, if you had 10 jars of honey priced at $2 each and started with $5 in the till, and now, have three jars remaining, you should have $19 in the till ($5 plus $2 x 7).

**Make the product attractive, no matter where it is sold.** The honey must be uniform and clear of imperfections. The jars should be one or two styles, not a random mix of whatever you can find. The label is important. Have an artist make it up or choose a standard offering displayed in bee supply catalogs or company flyers. Create a name and put it prominently on the label. There are various rules you should be aware of regarding what's on the label. Selling to neighbors is one thing, selling to tourists is another. Some laws require you to include your name and address on the label if you are not listed in the phone book (a good idea anyway, so repeat sales are possible). You should always state the weight (12 oz., 1 pound, etc.) and a statement of manufacturer (produced by ..., packed by ..., distributed by ...). Obviously, packaging helps sell product as well as create brand identification, so pay attention to design, detail and information.

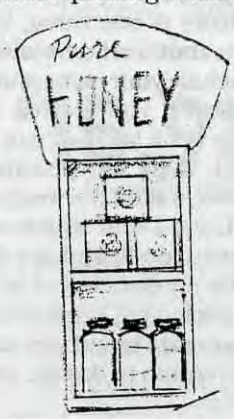
*Continued on Next Page*

*HOME STYLE ... Cont. From Pg. 463*




Your product mix should include the common sizes of honey, honeybears, chunk honey if you produce any, and possibly even pollen. Another thought is to have gift sets, or baskets available. Wax candles or other objects are another possibility. Larger stands should have a broader selection of products to sell – several sizes, colors and varieties of liquid honey; comb honey; wax; pollen; maybe propolis. Consider, in a stand, supplementing with local produce in season. All of this may require you to barter or trade or even buy from others to make yor operation the best it can be.

As for pricing, charge standard prices. A one-pound jar should sell for *around* $2.00 and a three-pound jar should sell for *around* $5.00. Discounting stand prices is not necessary because people expect to pay top dollar. Two exceptions might be for the end-of-season markdowns and when a prospect asks for a bulk purchase deal. You might sharpen your pencil, and offer some price reduction in these instances. Often, honey is sold in other containers, however. Pint, and quart canning jars are common. When pricing these use the same price/lb. calculations to arrive at a reasonable figure. Many people bring their own containers which is a strong selling point in many back-door markets. The price/lb. should be reduced a bit to reflect this.




**Sell your product.** As most marketers know, having good product is one thing; but it won't sell unless someone explains its merits. Although most beekeepers are not born salesmen, most enjoy discussing the product. And that's how you must view the selling function – communicating information.

The selling message is two-prong-selling the prospect on using honey, and convincing the prospect to buy honey from you rather than at the supermarket, *even though your honey is more expensive.* Keep these two selling arguments separate. First, honey is better in cooking and sweetening than sugar. It's natural. It gives cooked food a nutty, fresh taste. It isn't cloying in hot drinks. It's healthier to consume over a lifetime of eating. Finally, there's something about using honey – using real ingredients that have been created in the natural world – that places one closer to one's roots. Yes, it can be messy, but it cleans up instantly with water.

Second, your honey is better than supermarket honey because the latter is blended, heated, and stored in large containers sometimes for long periods of time. Even honey purchased in natural food stores from local producers has often been prepared in bulk. In the processing, individual honeys lose their distinct flavors and aroma. The true pleasure of honey is in sampling the different kinds of tastes, textures, and smells and recognizing their origins. If you can get these added pleasures from food, isn't it worth paying a bit more for the real thing?

Now that you have been infused with a speil, go out and sell. For starters, practice on your family and friends. Make the talk short, direct, and to the point. No more than two minutes should elapse from start to finish. Make each sentence count. Be prepared to answer questions. After you've perfected your talk with your family, your ready to go out into the larger world.

Go up and down your street, talking to neighbors. Bring a bottle of honey and let them sample it. Even better, leave a small sample jar. Give them a slice of something that was baked with honey. Demonstrate how a twirl ladle dispenses exactly the amount of honey you need. Show how easy it is to use a honey bear. After canvassing the neighborhood, continue at nearby sections of town.

You might ask: Why bother to sell to neighbors? They see your sign and know you sell honey. True, but they don't know why they should buy it from you, and they haven't been asked. Remember the famous story the former House of Representative Majority Leader Tip O'Neill, told of his next-door neighbor who didn't vote for him, and when he asked why not, she replied, "You didn't ask me."

After you've mastered cold-call soliciting, it shouldn't be too difficult to sell whereever you go. During a visit to the local hardware store, mention that you are a beekeeper. If someone inquires, state that you sell honey at your home. Furthermore, it just so happens that you have a sample jar in the car. So you scramble to the car, bring in a bottle, and let all the clerks try a sample. Say something about the particular flavor, and how it varies year by year. Mention how delicious your cakes taste when made with honey. Who knows, maybe someone will order a jar of two.

How about your dentist, your doctor, your gas station, your auto repair shop, your drycleaner, your bank, your favorite gift store? What about fellow employees at work? How about relatives? Where do fellow club members buy their honey? All of these categories apply equally to your spouse. If you think about it, you cast a big net. Everyone you come in contact with is a potential customer.

Consider this possibility. Say your church is having a breakfast. You agree to donate honey in honey jars with twirl dispensers. Your wife agrees to make a few loaves of honey-made brad. You do so. Both attendees and church members comment on how good your honey is. You suggest they buy honey at your stand or house.

**Gain free publicity.** Once a year, every local newspaper should write a story on you. Why – because you are news. You are an agriculturist in a time where they are a dying breed. You conduct a hobby few people know anything about. You participate in the state fair every year. You are keeping bees during a period of major devastation due to mite infesta-

tion.

Call up the editor or reporter and state an angle. Probably, every time you do so, you will speak to a different person since their turnover is so frequent. Suggest the reporter come down with his camera, and you'll be more than obliged to give him a story with great photo opportunities. In return, request that the reporter end the story with a blurb that goes something like this: John Smiley's honey is available at his stand from April to October, and by calling him at 555-9257 the rest of the year.

Most newspapers have a calendar listing. Every spring, send a written blurb to the paper, announcing that John Smiley's honey stand is now open for business. Type it up and include a B & W photo, and you might have a free ad. At the end of the season, submit another blurb, saying John Smiley's honey stand is about to close, and all products will be sold at a hefty discount. Discount is not a healthy word in honey sales, but at the end of the season, it just might be appropriate to move out stock. Over time, your annual closeout sale will gain a following, and you will be surprised at how much honey you can move.

Think of other possibilities. If you win a prize at the fair, write up a story and submit a photo of the winning entry, be it a jar of honey or a fully-formed frame. If you attend a bee workshop, write up a story about the event. If you speak at a school or club, write it up. It is important to submit a typed document so it is easy to read. Editors often ignore handwritten copy, especially if it is difficult to read. And use a spell checker.

If you have a flair for writing, consider writing a bee column. The newspaper might not pay you, but your comments will win an audience. Make it a combination how-to-do bees with a reflective component about life in general. A shorter piece – say 500 words – is often effective. Of course, each column ends with your pitch: Smiley's honey can be purchased at his honey stand on Trent Street.

**Do some marketing.** Of course, you don't want to put full-page ads in the newspaper, but you could be a little ingenious. One approach is so-called guerilla marketing. Get permission to set up a table marketing honey in a local store. Have samples of all sizes. Hand out samples on popsicle sticks. Give your spiel about how good unprocessed honey is. Be sure to include your phone number and address on the honey label to win renewed patronage.

How about imprinting a t-shirt that says "I sell honey."? Walk around town with it on, and people will comment. If you get real ambitious, you might sponsor a children's sports team. For $100 or so, you could have a dozen cute youngsters promoting your product on their shirts. Lastly, how about a bumper sticker on your car that tauts home-grown honey?

**Be open to the possibility of bulk sales.** One beekeeper I know started selling honey at his honey stand, and his summer neighbor purchased quite a bit. One year, this neighbor, who happened to be a vice president of a major mutual fund in New York, suggested he'd like to buy a 200-unit order of three-pound jars to give to his major clients. The brokerage house would supply special labels. The beekeeper made a $1,000 sale that Christmas. This holiday season will be the neighbor's sixth order. Moreover, because of the high quality, there's no price discounting.

Might this be a possibility for you? Any business owner, sales manager, vice president of sales, or marketing director could make such a decision. You might put the thought into his or her head. Companies spend millions of dollars on gift-giving to their clientele. Why not get your share? As another example, a college gave a jar of honey to each of its employees, students, and vendors. Its label said, "learning is sweet at _____ College."

When you think about it, there are many ways to increase home honey sales. BC

*Howard Scott is a freelance writer and keeps bees, and sells honey from his home near Pembroke, MA.*

# The Mysterious Case Of The DISAPPEARING QUEEN (And How To Replace Her)

James E. Tew

What an apt name for the perceived leader of the honey bee colony - the queen. Just like human royalty, the queen gets credit for all that's good in the hive but also gets blamed for all that's bad. But this past spring season has been one of the worst ever for blaming queens. While most beekeepers are totally happy with the development of their package bees this past season, a significant number of you have not been happy with your queens. The range of discontented comments has been wide.

I don't have anything but generalizations, but it appears that many of the complaints came from the Midwest, New England, and the upper South, while the comments from California were mixed. Many beekeepers in Alabama and Florida were a bit happier with the development of their packages this year. I have communicated with a number of state apiarists across the country as well as beekeepers and bee inspectors. I have included some of their comments for your review and comparison. Please understand that these are ***not my personal comments*** but rather those of respected apiculturists and beekeepers across the country.

***Comment*** "We have had many complaints from beekeepers about suppliers in Georgia, California, Mississippi, and Tennessee about queens. After discussing it with other beekeepers, we feel that the cold, wet spring was detrimental to queen mating. We feel that some of these producers were sending virgins. The cold, wet weather prevented virgins from mating once they were released from the cages - resulting in poor queen performance.

"Queen producers could not keep up with the demand and rushed the process. The mites have caused enough damage industry-wide to affect the demand for quality queens and packages."

***Comment*** "I personally experienced problems with queens this past spring. I suspect the late spring put the queen producers in a bind - one of my orders was two weeks late and

I don't think some of the queens were properly mated. I had about 15% drone layers. I don't see this as good news for the queen producing industry. The producer was stalling for time, but offered no good explanation for the delay. A little communication goes a long way, as well as backing up your product."

***Comment*** Queen failure has been rampant in Michigan. I talked to one beekeeper, during the long cold spell after packages were started, and he remarked that we will have lots of queen supersedures this (past) spring! He installed packages for many, many years and thus has had experiences with cold, rainy weather after the bees are released. That could be one reason. We have also had a lot of failures, after the weather became somewhat better. These failures appeared to be typical Nosema problems - that is about 3 - 4 weeks after the packages were installed. I don't know if the earlier conditions helped contribute to this, or that package producers have stopped using Fumidil-B. This should be checked."

***Comment*** "I think I am seeing a trend in package bee queens failing based on how quickly Apistan Strips were installed. It's difficult to say, but often beekeepers are putting in strips on package bees that have no drawn comb or brood. Are we somehow over-exposing new queens to the wrong levels of fluvalinate?"

***Comment*** (From the West Coast of the U.S.). "Yes, recently I have heard more about beekeeper disappointments with queens, both in packages and for requeening. But, interestingly, other customers of the same suppliers say that things are just fine. I think that there are more problems at both ends of this spectrum than we imagine. The mites put stress on colony populations that impact the production of the hive. Production can be measured in brood produced, colony populations, honey production, wintering survival, or any other aspect that is measurable. So I

assume that mites could also impact the quality and number of queens and packaged bees produced. Down stream, the mites could negatively influence even a good, healthy package or queen, as shipped by the producer (like Nosema).

"There is little doubt that our bees aren't doing as well as they used to. If you are a top notch beekeeper, you are having problems but you can overcome them enough to have reasonable bees. If you are less expert in your management, then all these stresses gang up to culminate in weak, non-productive, useless bees. It didn't used to be that way, so experienced beekeepers are likely to place the blame somewhere other than at their own feet. This adds up to discontentment and someone has to be blamed. Everyone is having at least some of these problems and the solution is to find answers, not to place blame (at least on other people)."

Have queen producers heard comments such as these? Absolutely! Are they concerned? More than you can imagine. After speaking with several queen and package producers this past season, a different view of "The Mysterious Case of the Disappearing Queen" came to light.

Many parts of the Southern U.S. were hit with March freezes and general cold weather. Those of us living in cold climates know how bees react to cold weather. They cluster, they may break brood rearing cycles, and they are much more difficult to manipulate. The producers to whom I spoke adamantly argue that they did not intentionally overbook. When the season started, it appeared that it would be a great one for the package and queen industry. The demand was high - weather was good. Then it turned cold and ugly. One producer said that he turned away around $60,000 in business that they knew they could not fill. Now that the 1996 season is history, many producers only had an average year at best. Frequently, due to the cold weather, they had to purchase extra syrup and work 85 hours per week in order to stay on as much of the schedule as they were able to keep.

*"The fact is that developing queens are being exposed to more of everything. Once they get to you and are installed, they continue to be exposed to more of everything."*

Ironically, the following advertisement was published in a national beekeeping magazine in May, 1947 - nearly 50 years ago.

*"We regret the delay in shipping packages. This is caused by conditions beyond our control. The season is three to four weeks late and in addition, there was a loss of a cycle of brood in March due to cold weather and a shortage of pollen. All orders will be shipped as they are listed just as soon as bees are available either by purchase or production. We have not taken new orders since it became apparent there would be a shortage."*

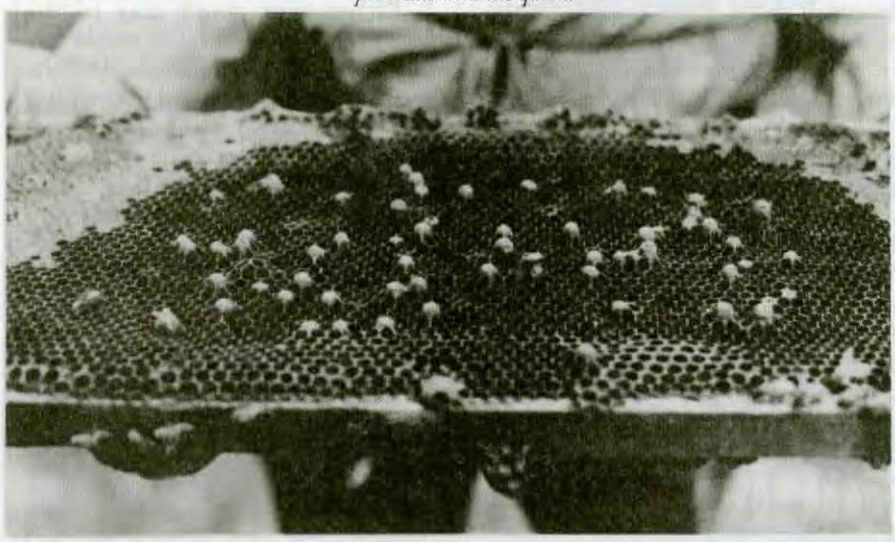
This advertisement summarizes much of what happened to some of your orders this past season. But weather was not the only variable. Both Varroa and Tracheal mites are a serious concern for commercial package and queen producers. They, too, must have ambitious chemical control programs. One producer said, "Any queen producer who doesn't control mites cannot ship queens very long - they're going to be out of business."

The fact is that developing queens are being exposed to more of everything. Once they get to you and are installed, they continue to be exposed to more of everything. I have been challenging and will continue to challenge beekeepers to be better hive managers. It's more important than ever. But ..... In quieter moments, I have wondered how all those manipulations will affect the colony.

Is the constant stress of manipulation, exposure to pesticides, and low-level mite infestations causing more queen problems than we have seen in past seasons? How about the stress of shipment? What are the hypothetical effects of riding in a mail truck for hours - or even days - on a young queen? What was the general conclusions of producers? Yes, there were some problems, but they found customers to be more upset over delayed shipping date rather than queen loss. Cold weather caused shipping dates disruptions. As many of you know already, many orders were turned away.

For reputable producers, it has never been policy to ship virgin queens (unless specified) - no matter how difficult the production season. Producers consistently pointed out that loyal customers are the backbone of the commercial package and queen industry and they would do all they could do to keep them loyal.

*The raised capped cells in this comb are drone pupae in worker cells, a sign of problems with the queen.*



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*"The need for requeening, due to queen failure, is a relative thing – it's a feeling you have that something is just not quite right in this colony."*

*DISAPPEARING ... Cont. From Pg. 467*

***The Problem-Queen Colony***

So where does all this leave you - the beekeeper with a queen-problem colony, or a drone layer, or with a disappointing queen in general? It could be a totally different situation. You may just want to perform annual requeening in the fall rather than the spring. For whatever reason, you want to replace your queen. The question frequently looks like this, "My county bee inspector checked my hives this past weekend and advised me to requeen one of my failing hives as it is very weak - especially when compared to my other hives. When is the best time to requeen? Now - so she can build up the colony for overwintering, or early fall, to take advantage of the fall flow?? The fact is that this hive is not doing me much good right now anyway."

***Does the colony need requeening***

In established colonies look for spotty brood patterns, weak (small) adult populations, listless adults, or non-existent honey crops (or consistently small honey crops). Also, requeen if the colony is overly aggressive and you find that to be a problem. Even packages that were only installed a few months ago should now be good colonies that are filling a single deep - maybe even two deeps.

The need for requeening, due to queen failure, is a relative thing - it's a feeling you have that something is just not quite right in this colony. This feeling comes with experience. Get help from a bee inspector or ask a beekeeping friend to have a look.

Here's a point. If you can easily tell that a colony needs to have it's queen replaced, it's probably already weak and lethargic. It may be too late to save it. Depending on the time of the year, you must decide if there is enough time in the season for requeening. Allow enough time for the new queen to become established and to produce, at least, one brood cycle. The more the better. If the colony is already weak and cold weather is just a few weeks away, I expect you're wasting your time requeening that particular hive.

Be absolutely certain that your hive does not have American Foulbrood. Requeening or any other manipulation on an AFB infested colony will only result in increased problems and disease spread.

***Fall Requeening***

Though many beekeepers prefer replacing queens in the spring, colonies can readily be requeened in autumn. If the colony is still populous, finding the queen can be a real trip. Queen excluders are useful in limiting the queen's travel within the hive and reduces the amount of equipment that must be searched. After putting the excluder on the colony (put between the two deeps of the brood chamber), wait about three days and then look for eggs. The deep having eggs is the deep housing the queen. There is no easy way to find queens, even then. Work slowly and methodically. Don't use any more smoke that is necessary. I have seen experienced beekeepers spend far more time than they expected "huntin' queens". One way or the other, you must find her. You cannot begin the replacement process until the old queen has been removed. It may take two or three tries over a couple of days. If the colony get too riled up, call it a day and try again.

***Where Can I Get a Replacement?***

Buying one from a reputable queen producer is the best and quickest way. Check with other beekeepers or in bee magazines for addresses of queen producers. Beekeepers frequently let the colony "raise its own queen". Certainly a colony can do that, too, but not as easily as you may think. It will take nearly two months for the new queen to be producing adult replacement bees in the colony. It could very well be winter by then.

***Procedure***

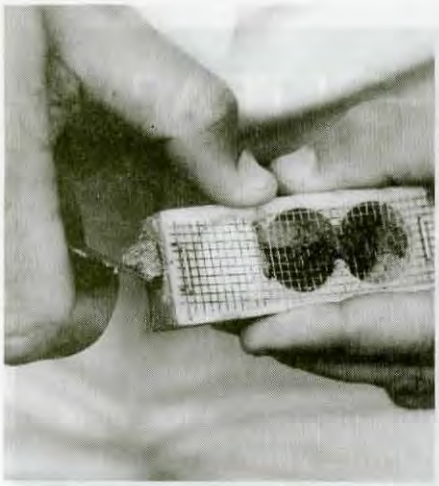
There are many different quirks to replacing queens. Though entire books have been written on the process, it is not really complicated. Hostility to foreign queens is probably a reaction by the hive's attempt to avoid parasitism. For whatever reason, it is a fact that colonies do not accept new queens, no matter how dire their condition, without a formal introduction period. A timed-release queen cage allows the hive bees time to accept the new queen's odor and allows the queen to emerge from the cage under quiet, calm conditions. Both wood and plastic cages are in use today. Either one will have a candy plug. Should more candy be needed for a short time, just use a piece of a marshmallow.

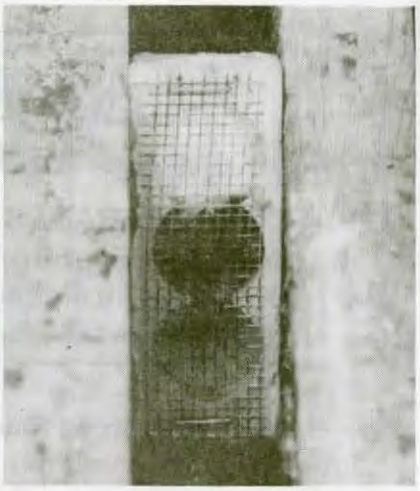
Order your queen to arrive a day or so before you plan to requeen. Keep her warm, dark and supply water to the caged bees. If you have trouble locating the original queen, you may need to keep the new one a few days. Don't forget food and water.

Put the cage near emerging brood. Nurse bees and other young bees are not aggressive toward new queens and the brood nest will incite the queen to begin egg production as quickly as possible. If there is no brood (or very little brood) in the colony, add a frame of open brood from another colony. After putting the cage in place, I suggest feeding sugar syrup and staying out of the hive for three - four days. Then quietly, open the colony - again with minimal smoke and disturbance, (1) remove the cage, (2) quietly pull out a frame, and (3) look for eggs, or ideally, the queen.

Either way, don't stay in the colony very long and don't cause any more confusion than necessary. If the queen is still within the cage after three days and if the bees are not acting aggressively, quietly release her onto the brood comb. Keep in mind that the bees will react toward the cage the same way they will react toward the queen. If they are holding tightly to the cage and you can't easily scrape them away, then they are not going to be happy with the new queen. Alternatively, if the bees easily move away when you brush them on the cage, your chances for success are good.

Another easy point. For the next few days after the queen has been released, take an afternoon walk in





*When using the traditional wooden cage, make sure the cork is removed from the candy end, pierce the candy with a small (frame) nail, and place the cage so the screen is exposed between frames.*

front of the hive and look for a dead queen on the landing board or on the ground in front of the hive. It's bad news if you find her, but at least you know the requeening process didn't work.

Finally, give the colony anything it needs - just like a convalescing patient. Feed it with both sugar and protein if necessary. Shade it, don't mow around it, keep skunks away from it. Do anything to help it but don't move it. Give the queen a chance to become truly established. By the time you see capped brood, you and your queen are both home free.

### *It's Always a Risk*

When speaking of chances for success, you must realize that queen replacement is always a risk. It's as though you're a hive surgeon and you're operating on a patient. Sometimes, even if you do everything right, things just don't go the way you had hoped. If it doesn't work, combine the colony with another and try for an early spring split. Either way, we all must become more adept at queen management - for that matter - we must all become more adept at hive management in general. Be able be to recognize queen problems and have some plan for correcting those problems. Mites have required us to get to know our queens much better, but yet not get overly attached to them. BC

*James E. Tew is State Specialist in Apiculture, The Ohio State University in Wooster, OH.*

# CANDLE MAKING

## For Right Handed People

Frank Fox

Let's face it – there are two types of people on this earth: Right-handed people and left-handed people. The lefties are more soulful and spiritual; they are, for the most part, the "feelers and artists" of the world. The majority of the greatest dancers, poets and painters are southpaws. Sure, they put up with the inconveniences of living in a right-handed world, but that's a small price to pay for the fame and fortune that usually accompanies them. Righties, on the other hand are, well, usually not any of those things. They are more action- and results-oriented and lean toward being umpires, heavy equipment operators, professional wrestlers and politicians.

I will quickly add that this is not a put-down on righties. It is simply a statement of the facts as I have come to know them. For you see, I must declare here and now that I am right-handed. And I admit that, from childhood until today, I've invariably left the "finesse moves" to others, while I have been perfectly content to be relegated to the "power moves" of life. In other words, my wife decides where the sofa would look best, and I put it there.

Recently, however, I had one of those rare, usually ignored urges to do something creative. I had the inexplicable hankering to make candles. Not just the simple type made by rolling sheets of wax around wicks, but honest-to-goodness candles made from a mold. And not just any mold. I wanted it to be one of the old-fashioned tin types.

Normally, this would present a challenge even to lefties, but it meant a true "leap of faith" on my part. I had to think like a lefty to pull this one off! And it was difficult. My first couple of tries ended in abject failure. But, after awhile, I began to get the hang of things, and I'm proud to say that my candles now grace some of the finest middle-class tables in America. And my Mom's proud of me, too. I now consider myself a token southpaw.

The following is a step-by-step, blow-by-blow account of how to do it and what to expect. Take your time, have patience, put implicit trust in the printed words you are about to read, and take that same leap of faith with me.

MATERIALS NEEDED (In roughly the order needed)

- 4 pounds of beeswax
- 5-pound baker's scale (optional)
- tin candle mold (either 6″ or 10 1/2″ tapered in 2-, 4-, 6-, or 8-candle size)
- gun cleaning rod with cotton swab attachment for 12-gauge shotgun (any substitute will do, such as a coat hanger wire with a thick swab of cotton cloth fixed to the tip of it)
- spray can of silicone lubricant or specially formulated "quick release"
- long piece of #2/0 wick (approximately 1' for each candle)
- large needle and thread
- 2 12″ wooden rulers (1-1/4″ wide) or equivalent-sized pieces of wood
- Coleman camping stove (optional)
- old, large cooking pot with lid
- 2 or 3 institutional-sized (117 oz) empty food cans
- liquid measuring cup
- pair of sturdy neoprene gloves
- pint bottle of hydrogen peroxide (optional)
- 1 or 2 pairs of pliers or channel locks (optional)
- 1 or 2 pairs of clean pantyhose
- several empty plastic yogurt or cottage cheese cups
- small ladle or cup with handle
- rectangular cake pan ( about 7″ w x 11″d x 1 1/2″h)

The only assumption I'm going to make throughout this entire process is that, at the very least, you are capable of taking the end-of-season cappings, slumgum and other assorted wax balls you've accumulated and, by the judicious use of a solar melter, are able to render same into several blocks of wax when, added together, will weigh approximately four pounds. Don't mix light and dark wax though. Keep the light for candles and

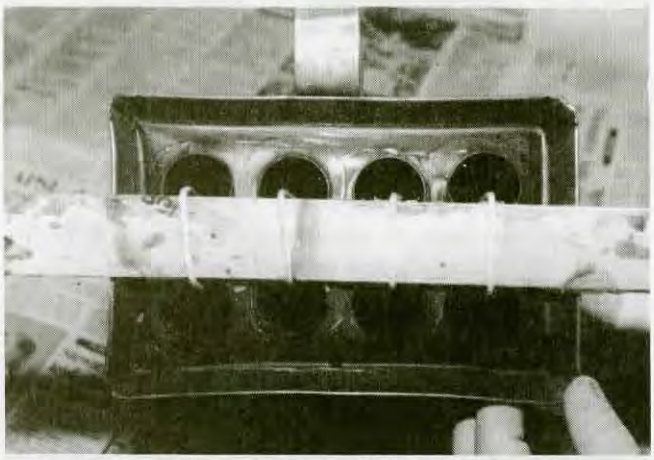
*All the equipment needed for making wax candles from a mold.*

*Continued on Next Page*

*CANDLE MAKING ... Continued From Pg. 471*

*Carefully place the tin can containing the wax chunks into the large cooking pot partially filled with water.*

*Swab out the mold cavities with silicone to release of the finished candles.*



*A ruler is slid under the bottom wick loops to keep the wicks from touching the sides of the mold cavities.*

decorations, sell, or use the dark for carpenter or sewing needs.

If you've got a small baker's scale, weigh out the wax to get as close to four pounds as possible. This will provide you with plenty of wax to fill even the largest candle mold in one shot. It also helps if the wax chunks can be easily dropped into the aforementioned can while it is partially submerged in boiling water.

A quick word about molds. The shorter the candle, the easier it will be to make and release. But the 10 1/2" tapered candles are a favorite because of their elegant, formal appearance. In general, the fewer candles per mold, the fewer foul-ups, bloopers and blunders you'll experience. However, it takes just as much time to produce a pair of six-inch candles as it does to make eight 10 1/2 inchers.

Do not assume that all the candles are going to turn out O.K. Despite your best effort, some may not release and will have be destroyed in the retrieval process. Others may be scarred to the point of being unacceptable to you. So hedge your bets and assume a 10- to 20 percent cull rate.

Next, let's take care of a few preparatory steps. Whether you're using a brand-new mold or a used one, it is very important that it be properly cleaned, dried, lubricated and threaded before we can even think of filling it with wax. Here's how to do it.

Begin preheating your kitchen oven to about 100 degrees. While the oven is warming up, wash the mold in warm, soapy water, using a soft bottle brush to reach all interior cavities of the mold. Then rinse it with warm, clean water, shaking out excess water. Dry it with a towel. Now, place the mold in the oven for about 15 minutes or so. Periodically check to see if all the water has evaporated. Don't get it too hot, and be careful handling it.

If the mold is not new, there will probably be a bit of unreleased wax deep in the cavities despite your best cleaning efforts. The low temperature in the oven should loosen and melt any residual wax it might contain, so have a piece of aluminum foil on the rack beneath the mold to catch any molten wax that may drip out. Don't have the oven temperature too high! It's unnecessary and could ignite any wax that is released from the mold.

After you have removed the mold from the oven, and it's had a chance to cool down, you're ready to lubricate the inner cavities with silicone spray. Lubrication is the final process in helping ensure your candles release quickly and smoothly and without unsightly blemishes or "pock marks". I personally believe a good release is the most important step in the entire candle-making process.

There's nothing more disheartening than to spend the better part of two hours in pursuit of perfect candles, only to have the whole shooting match ruined when you, falling back into your habit of well-intentioned right-handed forcefulness, slam the tin mold on the counter and end up ruining both the candles and the mold itself. So lubricate with great care!

Now that the mold is clean, dry and lubricated, it's time to "thread" it with the length of wick. Here's where the needle and thread come in. Tie the thread to the needle, then use a slipknot (or any knot that you can tie) to fasten the thread to the very tip of the long piece of wick.

*The foaming at its peak.*

# LIGHTEN UP!

You must determine whether the color of the wax you are working with will make nice candles or not. If you prefer the classic, golden-yellow color of beeswax, some lightening by "bleaching" will be required. If, on the other hand, you like the olive-green-colored (or darker) wax, you may wish to pass over the "bleaching" process, and proceed directly to straining out the solid impurities in the wax.

For bleaching, measure out one to two ounces of hydrogen peroxide for each pound of wax you are melting. The more peroxide you use, the longer you'll have to wait for the wax to be done, but the result will be lighter-colored wax.

Let's check the wax again. When the wax is completely melted, slowly add the hydrogen peroxide. Begin stirring the mixture with the second ruler or piece of wood. It's a good idea to wear your neoprene gloves while you're doing this, for the process takes about a half-hour, and the steam can become bothersome after awhile.

Within a few minutes, there will be a foaming or bubbling in the wax. This is the extra oxygen molecule being released in the wax. The scouring action of this process causes many of the impurities in the wax to become separated from the wax and sink to the bottom when the bubbling is over and the stirring stops. This should take about 30 minutes if you used a one ounce to one pound ratio of peroxide to wax. As you can probably guess, a 2:1 ratio should take about twice as long. After the foaming starts, you do not have to continue stirring constantly. Instead, about 30 seconds of stirring every five minutes of foaming is about right. This is enough to ensure that all the wax is exposed to the scouring action of the peroxide. When the bubbling slows down, stop stirring and carefully remove the tin from the pot. A couple of pairs of pliers may be quite helpful at this point.

Here's a good way to thread the wick through the mold: If you are using a six candle mold, it will be configured as two rows of three candles each. An eight-candle mold would be two rows of four candles each. Count the first candle as #1, then go down the line. In the eight-mold, the last candle in the first row would be #4, then you'd start with the first candle in the second row as #5, and so on.

Start threading the wick through the small wick hole in the top of candle #1 (not the big, open bottom hole), then pull the wick and its surplus through the bottom of #5. If, anytime during this threading process, the sewing thread breaks off or comes loose before you finish, don't go ballistic; just back up and try the process again. Honestly, at some point you will get the hang of it. Leave enough wick remaining at the top of candle #1 so you can later tie it off with #4. A couple of inches will do fine.

Next, thread the wick that you just pulled out of the bottom of #5 through the little top wick hole of #6, then through the bottom hole of #2, then the top wick hole of #3, the bottom hole of #7, the top wick hole of #8, and finally, the bottom hole of #4. Then tie the loose end of #4 to the loose end of #1. The slack should be taken out, but the wick should not be so tight that you could play "Classical Gas" on it.

When done properly, you should be able to slip one of the rulers under all of the wicks on the bottom of the mold (the big holes). This is done to keep the wicks centered in the cavities and away from the edges of the mold

Now it's time to move our party outside. Rather than using the stove in your kitchen right now, I strongly recommend using the Coleman camping stove out in the garage or workshop for your initial attempt at melting and pouring wax. Surely, you needn't ask why! If your spouse finds wax all over the kitchen and stove, that's exactly what you'll be doing for the next several days...camping out! Fill the cooking pot about a quarter full with water. Through trial and error, you'll learn how much water is enough to heat the can without "floating" it and running the risk of dumping molten wax into the boiling water. Put the chunks of wax in the big can. If the chunks of wax are small enough, you should be able to put about two pounds in the can, with the rest going in as the original two pounds melts. Then put the can of wax into the pot of water, fire up the camping stove burner, put the lid on the pot and wait for about 30 minutes.

While you're doing that, continue to read the next few steps so they become second nature to you. Remember, leave the lid on...a watched pot never boils! With the lid on, the steam that forms in the pot really helps to melt the wax quickly and safely. It can also give you a nasty scalding, so always wear your neoprene gloves when you're working with boiling water. And absolutely never heat wax directly on an open flame! Always heat it in a water base.

When the 30 minutes are up, carefully remove the lid. Watch out for the steam! Is the water boiling? Good! Is the wax beginning to melt? Excellent! If you need to add more wax to reach the four-pound total, start doing it now. If the water's not boiling yet, you probably live at a lower altitude than the rest of us and it'll take a bit longer for you to catch up with the class. Don't worry, we'll wait for you. Ready now? Okay, let's continue.

As the wax continues to melt, let's rig up one, or two if you like, of the empty cans as strainers. Carefully stretch a section of the pantyhose over the top of the can, making sure there is a slight bowl-shaped depres-

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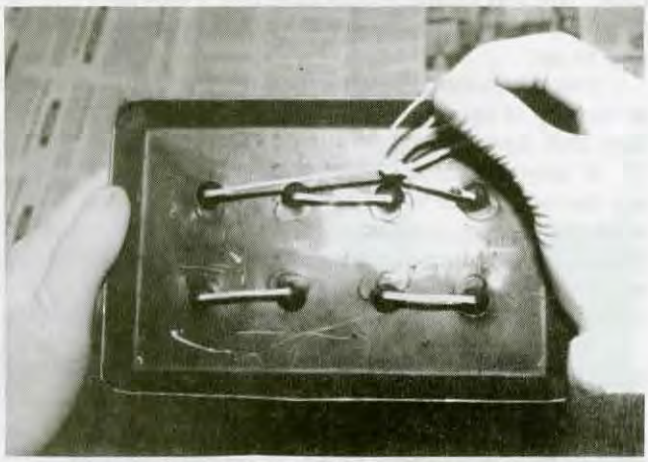
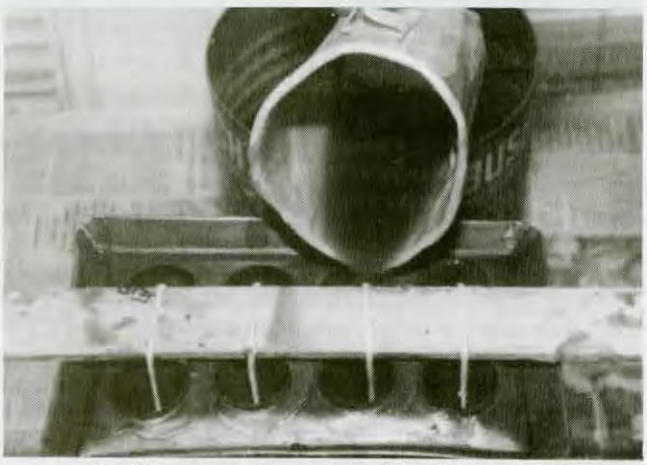
*CANDLE MAKING ... Cont. From Pg. 473*



*The way the top wicks should look, with the two loose ends (numbers 1 & 4) tied together.*

*Carefully pour the hot wax through the strainer into the tin can. Repeat two or more times to ensure that as many impurities as possible are removed from the wax.*



*Carefully pour the clean wax into the mold cavities using a small cup or ladle.*

sion. Don't have it so tightly stretched across the can that it resembles a mini-trampoline. If you do, the hot wax will "bounce" off it when you try to pour it into the can, you'll have a real mess and will waste some valuable wax. Now do you see why we're not doing this in the kitchen?

When the can has been removed from the pot and placed on the ground, grab the can securely in both hands and carefully, slowly pour the wax through the pantyhose strainer into the empty can, then remove the panty hose, stretch it over the can you just emptied and repeat the process. (Throw away any impurities in the first can before refilling it with wax a second time.) After all, the strainer doesn't get out all impurities on each and every pass through it. In addition to straining out all but the smallest of particles, you are also cooling the wax down to about 130-140°F, which helps to create a better release from the mold when the wax hardens. Too cold, and the hardening is irregular; too hot and the wax "sticks" to the mold.

Place the mold in the baking pan. This will contain the hot wax if any of the cavities "spring a leak" through the tiny tip hole for the wick. Dip the ladle or cup into the can of molten wax to fill it. Then use it to carefully fill the molds to the brim of the cavity, trying to avoid overflowing. If it happens, don't worry about it. If you do have a "leaker" or two, give it a few seconds to see if it stops, then pour some additional wax into the cavity. If it's going out as fast as it's going in, give it up for the time being. That's why I do eight candles at a time instead of two. With that many, I know there's a pretty good chance that I'll end up with at least six beauties when I'm done.

Any surplus wax can be poured into yogurt or cottage cheese cups for future use. The cups produce wax forms small enough to easily add to a can full of molten wax the next time you make candles. When you get down to the sludge in the bottom of the can of melted wax, discard it. It contains solid impurities like propolis, pollen, dirt and the like. It's not worth your time to try to reclaim even a portion of it, and you risk contaminating the pure wax you've already saved.

Now comes the hard part for me. I've got to wait for them to harden. Let them sit at least a couple of hours. Better still, leave them alone overnight. If possible, put them in the freezer about one hour before you try to release them. When the waiting is over, the moment of truth is finally at hand. Carefully clean away all the residual wax on both the top and bottom of the mold. Cut the top wicks, leaving an equal amount of surplus wick for all candles. Pull on the paired bottom wicks.

I predict that about two-thirds of them will release smoothly and effortlessly. And don't they look great? Good for you! If they're less than perfect, so what? There may be a few with pock marks on them, indicating that either the mold wasn't perfectly clean or there was too much silicone coating in the cavity. You can still keep them for personal use. If the candles are irregularly shaped, or there are blank spots or gaps in them, chances are the wax cooled off too much during the pour. Melt the rejects down and try again. It costs you just a little time and a few feet of wick.

As far as the remaining "problem children" are concerned, take a pair of pliers and gently tug on the bot-

*After the wax has hardened, cut the top end wicks to allow the candles to be pulled out from the bottom.*

*Slide the ruler out from under the bottom wicks after the wax has thoroughly hardened.*

tom wicks, first making certain that the top wicks aren't somehow holding the candles in. Predictably, all but one will come out in this fashion.

The last one can be a real juvenile delinquent. This one may end up being your sacrifice to the gods of wax. You may want to put it back in the freezer for another hour or two, or if you're running out of patience, try running hot tap water over that section of the mold to see if the candle releases.

If none of these remedies work, you'll be tempted to give the mold a couple of good shots on a table top, but resist the urge. You've come too far to resort to being right-handed again! Simply take solace in the fact that not even the Mick batted a thousand.

Put the mold in your oven (open end down) and turn the oven up to 100 degrees to allow the wax to slowly melt out. Of course, line the bottom of the half-sized baking tray with a piece of aluminum foil and place it on the shelf below the mold to catch the droppings. What a coincidence! This also once again begins the process of cleaning the mold in preparation for your next round of candle making.

There is definitely a sense of pride and accomplishment associated with making your own candles. You might find that it can also be a very lucrative sideline business for you. A pair of well-made tapered beeswax candles, matched in color, can command a premium price of $5.00 or more. Equally important, you've overcome your right-handedness! There's no stopping you on the road to creativity! Now, where did I put my violin? It must be under all these watercolors... .BC

*Frank Fox is a freelance writer residing in Nashville, Tennessee. He and his wife, Libby, are entering their third year as beekeepers.*

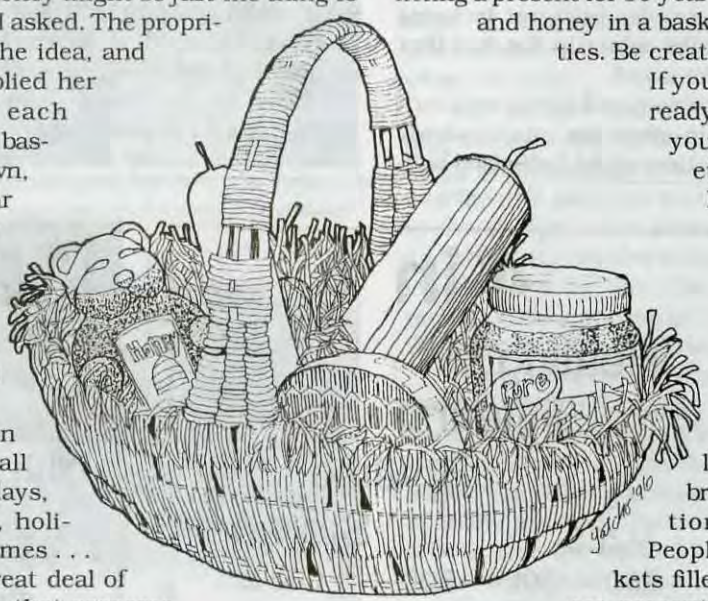
# A TISKET, A TASKET

## A Unique Way To Sell Your Honey

Faith Andrews Bedford

Several years ago, we took a small apartment in a big city for a short stay. The day we moved in, we found, on the kitchen counter, a little welcome present from the apartment manager: a basket with two cups, some instant-coffee packets, two tea bags, some sugar and creamer and a bag of cookies. Just the thing to force us to take a break from unpacking . . . besides, we didn't know just which box held our coffee pot anyway! The basket was a wonderful idea. There was just one problem: It didn't contain any honey. I mean, who can have tea without honey?

Right then, a new marketing idea was born. I called the manager to thank him and asked who prepared the baskets. He told me the name of a little specialty shop a few blocks away, and I visited it the next day. Didn't they think that a small jar of honey might be just the thing to include in their baskets? I asked. The proprietor was charmed with the idea, and for the next year, I supplied her with a case of honey each month. Recipients of the baskets tracked my farm down, and many became regular buyers. They liked our honey so much that they bought the baskets to send to their friends. This, of course, created even more good will – and good business – for me.



Baskets are being given as gifts these days for all sorts of occasions: birthdays, anniversaries, weddings, holidays, new babies, new homes . . . even new cars! I sell a great deal of honey to a gourmet shop that prepares baskets of goodies for a local car dealer. When a new car is delivered, there, on the back seat, is an elegant basket full of gourmet items, including our honey, all tied up with a big bow. You can bet that those new car owners become devoted fans of our honey. There are undoubtedly a number of shops in your area that make up this sort of basket. Seek them out. Gourmet and specialty shops are your best bet, but sometimes individuals working out of their own homes create baskets as a home-based business. Start with the Yellow Pages to see if you can find such businesses. If that doesn't work, pound the pavement. If all else fails, make them yourself!

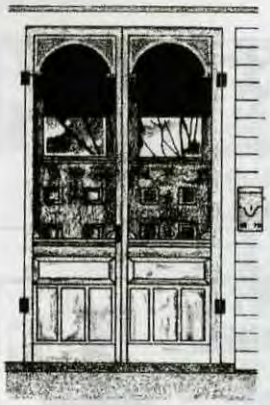
One of my favorite shower gifts for a new bride is a pretty basket, filled with excelsior, into which I nestle a honey pot and wooden twizzler and, of course, a jar of my honey. This small basket would make a wonderful item to offer to shopkeepers. Bought in bulk, baskets and twizzlers are not very expensive. Perhaps you can find a local potter who would like to have a guaranteed order for honey pots. My sister is a potter, and she makes me beautiful honey pots on which she paints "Shelterwood Farm Honey." The recipients of these pots often make an effort to buy our honey to refill them, once they have used up the original jar. For special people, she has even individualized the pots by painting their names on them. I gave a good friend a pot which said "Nan's Honey." For a special anniversary or event, the potter could write (or stamp with potter's rubber letter stamps) something like "Susan and Richard's Golden Anniversary." What more fitting a present for 50 years of marriage? The honey pot and honey in a basket idea has endless possibilities. Be creative.

If your local food shop does not already prepare specialty baskets, you might convince the proprietor to do so, featuring your honey, of course. Many cottage industries are springing up these days in regions of the country both large and small. "Local" baskets can take advantage of this trend. In our small town, home-based businesses turn out mustard, chocolates, pasta, wine, cheese, breads, goat's milk soaps and lotions and many other items. People from here love to take baskets filled with local goodies as hostess presents when they travel to visit friends and relatives.

In like manner, visitors to our town (a historical tourist mecca) find these "local" baskets make wonderful remembrances of their visit here. Your local honey belongs in such a basket.

I sell all the honey I gather . . . and more. By Winter, I am begging other beekeeping friends to sell me their honey to blend with mine so that I can keep my customers happy until the next Summer's extraction. Baskets can be a bountiful business idea. Make them work for you. BC

*Faith Andrews Bedford is a freelance writer, beekeeper and very successful honey marketer from Rockville, MD.*



Ann Harman

# Home Harmony

## A Peach Of A Month

August generally brings hot weather and late summer harvests from the garden. However much you may dislike August weather, it is the month for peaches. A ripe peach-meaning one whose juice dribbles down your chin and all over your shirt - is a rare treat.

Peaches are a soft fruit, easily bruised, and do not ship particularly well. Unfortunately the ones found in supermarkets tend to be a bit hard and sometimes tasteless, although they look beautiful. Your chances are better at finding succulent peaches at roadside stands and farmer's markets where the peaches have been picked ripe and can be bought within a few hours of picking. Peaches picked when definitely underripe will not ripen in spite of your best efforts with paper bag and an apple. If peaches are rock-hard, buy some other fruit.

Some people do not like the fuzzy skin of a peach. Generally a good ripe peach can be skinned easily, but don't overlook the smooth-skinned nectarine. If you want to remove peach skin easily and quickly, just pour boiling water over it and the skin should slip right off. Some people have luck with just rubbing the skin with the back of a knife, which loosens the skin.

What about honey bees and peaches? Well, it seems that the honey bee may or may not be really useful to peach blossoms. Certainly wind does a good job of pollinating some varieties, and honey bees and other insects may help fruit set. However, the relationship between honey bees and peaches seems to need more study. One thing that definitely does not need more study is the compatibility of honey and peaches. If peaches are delicious, then the combination of peaches and honey is supremely delicious. By the way, you can substitute nectarines in any recipes for peaches.

I just mentioned tasteless peaches. Here is where honey comes to the rescue. For a quick fix to that boring peach, skin it if you wish, slice it into a small dish, sprinkle with a teaspoon or so of orange blossom honey, do something else for about 15 minutes, then enjoy the much-improved peach. At this point if you wish to add some vanilla ice cream, go ahead.

### MIDSUMMER FRUIT CUP

Peaches, sliced into bite-sized pieces are an excellent addition to various combinations of fruits and berries. Cut cantaloupe or other melons crosswise into rings, remove seeds and fill the center of the "wheel" with sliced peaches and berries. Add some honey to taste and enjoy the blend of flavors. Or you can try this next recipe; it's quick and simple.

1/4 to 1/2 pound sweet cherries
3 or 4 large ripe peaches
honey to taste
1/2 cup light sweet white wine
1 tablespoon finely chopped crystallized ginger

Pit cherries and cut in half. Peel peaches and slice. Combine fruits and sweeten to taste. Combine wine and ginger and pour over fruit. Chill until very cold, at least 1 hour, for flavors to blend. Spoon into sherbet glasses or dessert bowls. Serve very cold. Makes 6 servings.

*The Spice Islands Cookbook*

### PEACH MELBA

With this next recipe you can make a light dessert. Since raspberries and peaches may not be ripe at the same time, you can use frozen raspberries, but definitely use fresh peaches.

2 fresh peaches
1/2 cup low-fat yogurt
2 teaspoon honey (the lighter the better)
several dashes nutmeg
1/2 cup fresh or frozen raspberries

Arrange one peach half in each of two wine-type glasses. Puree one peach half, the yogurt, one teaspoon honey and nutmeg in a blender. Chop the last peach half in very small pieces and add to the sauce, but do not blend. Pour into the wine glasses. Then blend the berries with the remaining honey and spoon on top of the peach/yogurt mix. Serve cold.

*A Honey Cook Book*
A.I. Root Company

### HONEY PEACH PUDDING CAKE

Peach cobblers are popular, as are peach pies. You can substitute honey to sweeten the peach mixture in both of those recipes. This next recipe makes a nice change from the typical cobbler. Although it is recommended to serve warm, you can have some ice cream with it to stay cool.

5 peaches, peeled and sliced
1/4 cup honey
1/4 cup butter
1/2 cup honey
1 egg
1-1/4 cups flour
1-1/2 teaspoon baking powder
1/4 teaspoon salt
1/2 teaspoon vanilla
1/4 cup milk
2 tablespoons sliced almonds

Combine peaches the 1/4 cup honey; set aside. Cream butter and the 1/2 cup honey until smooth. Beat in egg. Add flour, baking powder, salt, vanilla and milk. Beat until smooth. Spread into greased 8-inch square pan. Arrange peach mixture over batter; sprinkle with almonds. Bake at 350( for 55 to 60 minutes or until done. Serve warm.

*Ontario Honey Recipe Book*
Ontario Beekeepers Association

### BLACKBERRY-PEACH PIE

Since peaches blend so well with other fruits, try this combination for an August pie.

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pastry for 2-crust pie
1/2 cup honey
2 tablespoons tapioca
1 teaspoon lemon juice
1/4 teaspoon almond extract
1 pint blackberries
2 cups sliced peaches
1 tablespoon butter

Line pie pan with bottom pastry. Combine honey, tapioca, lemon juice, almond extract and a pinch of salt. Combine blackberries and peaches. Pour honey mixture over fruitand mix gently. Fill pastry-lined pan with fruit mixture. Dot with butter. Roll out remaining dough, cut slits in top and cover fruit with top crust. Bake in 425( oven for 35 to 40 minutes.

*Nature's Golden Treasure Honey Cookbook*
Joe M. Parkhill

## PEACH ICE CREAM

Fresh peach ice cream has to be one of the best things you can make with fresh peaches. Try this recipe with your favorite ice cream maker.

3 tablespoons honey
1 tablespoon lemon juice
4 cups peeled and sliced peaches
1/2 teaspoon unflavored gelatin
1 cup heavy cream, whipped

Mix honey and lemon juice and drizzle over peaches. Cover and set aside for 2 hours. Drain fruit and combine 3/4 cup of the juice with gelatin. Place over low heat until gelatin is completely dissolved. Put peaches in the container of a blender. Add gelatin mixture and process at medium speed until peaches are chopped fine. Refrigerate. When mixture begins to thicken, fold in whipped cream and pour into container of ice cream freezer. Process into ice cream. You can transfer the mixture to a deep freeze to h a r d e n . Makes 6 servings.

*Naturally Delicious Desserts And Snacks*
Faye Martin

## CANTALOUPE-PEACH CONSERVE

This next recipe has to be made while you can get fresh peaches and fresh cantaloupes. Then you can set it aside and give as Christmas presents. (No, it's not too early to think about that if you are going to make this conserve).

4 cups peaches
4 cups cantaloupe
4 lemons
3 cups honey
1 cup walnuts

Peel and dice cantaloupe and peaches. Juice the lemons and grate their rinds. Put cantaloupe, peaches and lemon juice and rind in a kettle. Bring to a boil. Add the honey and cook until thick and clear. Add nuts during the last 5 minutes of cooking. Spoon into hot sterilized jars to within 1/2 inch from top. Complete seals and process in a boiling water bath for 5 minutes.

*Putting It Up With Honey*
Susan Geiskopf

Fresh peaches make August a very nice month. BC

# GAMMA IRRADIATION CONTROLS AMERICAN FOULBROOD

Dean Breaux

In March 1994, I was contacted by a small beekeeper who wanted to sell all of his bees and equipment. After visiting the hives, I found that almost all of them were infected with American foulbrood. The beekeeper had been taking combs from healthy colonies and swapping them with combs from infected ones. In total, we found 71 hives out of a total of 125 with American foulbrood. I had heard a lot about irradiation, due to the fact that we have an irradiation facility about 40 miles from our operation. So I told the beekeeper that if I could secure permission from the Florida Department of Agriculture to irradiate the equipment (current laws in Florida require that all equipment infected with American Foul Brood be burned), I would make him an offer on the bees. After a few hours on the phone, we had received verbal permission from the Florida Department of Agriculture to go ahead with the irradiation on an experimental basis. We were also advised that the project would be monitored by the department.

We purchased the American foulbrood-infected beekeeping operation and contacted the irradiation facility, Food Technology Inc., to schedule the sterilization of the equipment. During our conversation with Food Technology we were advised that all of the honey had to be removed from the hives before they would allow us to irradiate the equipment. Honey has not yet been approved for irradiation by the Food and Drug Administration.

We scheduled the irradiation for the following week. We removed all of the bees and disposed of them, and then removed the honey from the hives. Then all of the equipment was taken to the plant where it was placed on pallets in their carriers and irradiated. We dropped the hives off at about 8:00 a.m. and picked everything up late that afternoon at approximately 4:00 p.m. The hives were irradiated with an absorbed dose of 13.20 kGy.

After the hives were sterilized, we installed two-pound packages of bees and new queens taken from our operation. The hives were monitored closely for the recurrence of American foulbrood as well as other brood diseases for the following year. The bees seemed to thrive in the hives after they had been sterilized. There has been no recurrence of American foulbrood in those hives since, and we are going into the second year as I write this article. During the two-year period we have treated those hives the same as our other hives with preventive applications of Terramycin in the Fall. All of the hives have been inspected by the Florida Department of Agriculture. In short, we would recommend this procedure to anyone for the sterilization of American foulbrood infected equipment.

The cost of irradiation of the equipment in 1994 was approximately $9.04, per brood box with a lid and bottom board. As you can see, even with the added labor and shipping of the equipment to the irradiation facility, it is less expensive than burning the equipment and buying new. In addition, you are able to save the labor required to build it. One of the greatest benefits is that you can use the equipment right away.

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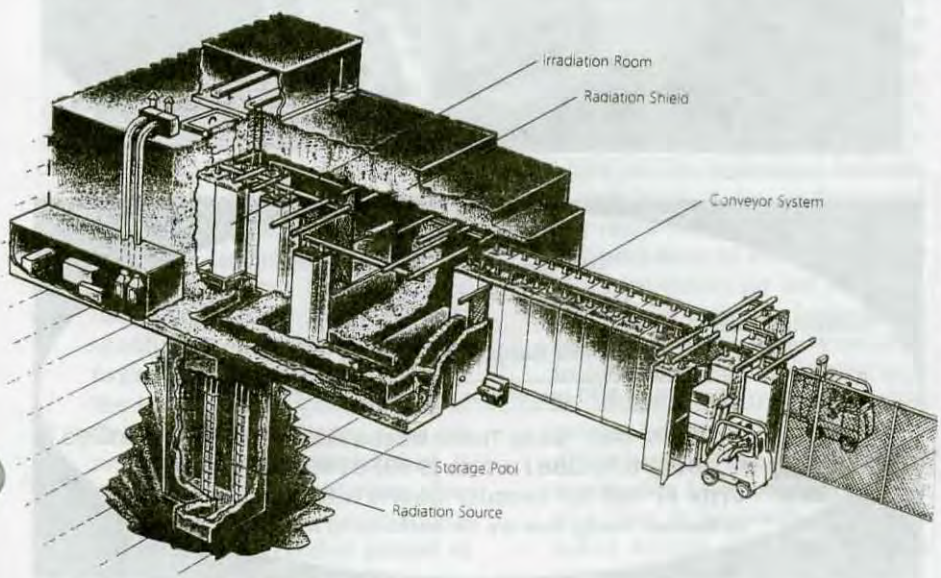
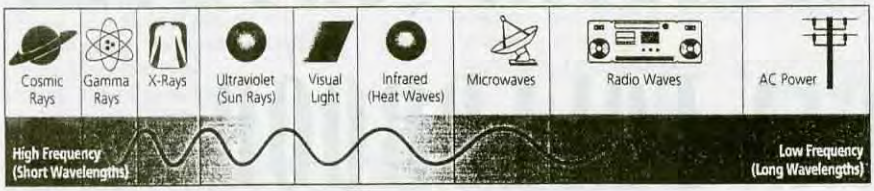
*An industrial irradiator consists of a room, with concrete walls six feet thick, which contains the radiation source (cobalt 60). A conveyor system automatically moves the products into the room for irradiation, and then removes them.*



*IRRADIATION ... Cont. From Pg. 479*




Electromagnetic Spectrum

The use of irradiation is not new. This technology has been used on approximately 75,000 hive boxes, most containing frames, in New South Wales in Australia since 1984. The New South Wales Department of Agriculture pays for the irradiation of the equipment, which is currently $20A per hive. The major limitations to the use of irradiation are the availability of irradiation facilities and the current laws as they concern the disposal of American foulbrood-contaminated equipment. In most areas of the United States the law requires that you burn equipment infected with American foulbrood. In the United States, there are approximately 39 irradiation facilities.

The most labor-intensive aspect of irradiating beekeeping equipment the United States is the fact that all of the honey must be removed prior to the treatment. It would be extremely helpful to the industry if we could pool some of our resources to get the FDA permits in place so that honey could be irradiated. At the present time, due to the low use of irradiation by the beekeeping industry, the facilities that irradiate are not interested in funding the required research. Estimates of the cost to do this range from $5,000 to $25,000. The sterilized honey could be used for other things as well.

Should anyone have any questions or comments in regards to this article, feel free to contact the undersigned.

Thanks to the Florida Department of Agriculture and Food Technology Service Inc. of Mulberry, Florida for their help and assistance in this program. BC

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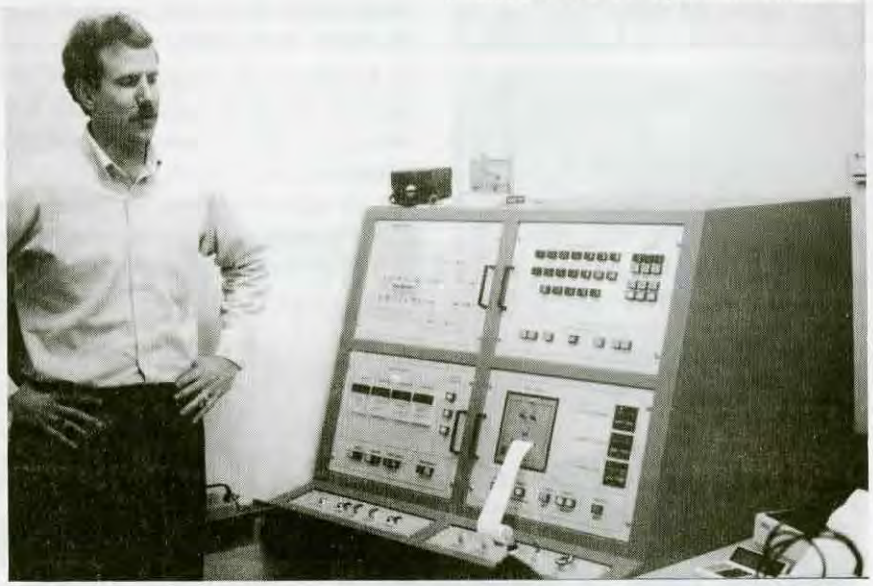
*Dean Breaux operates St. Ambrose Apiary in Dade City, FL.*

*FL State Bee Inspector James Alderman, Jr. & Dean Breaux (on right) inspecting hives.*

*Control console and Safety Director Fred Harris.*



# ?Do You Know? Answers

1. **True** Creamed honey is a finely crystallized honey that has had the crystallization process carefully controlled resulting in a product that has a much smoother consistency than naturally granulated honey. Creamed honey should have a texture similar to that of butter.
2. **True** The use of bee escapes to remove bees from honey supers works best on cold or cool nights because the bees in the honey supers leave them to cluster with the bees in the brood nest and then cannot return to the honey supers.
3. **False** Benzaldehyde works best when the temperature range is between 65 to 80°F. and butyric anhydride works best at temperatures between 80 to 95°F.
4. **False** When honey is allowed to granulate slowly and naturally, the sugar crystals are coarse and gritty. However, speeding up the granulation process, in addition to seeding the liquid honey with finely crystallized honey, will produce creamed honey with small crystals of uniform size.
5. **True** Almost any honey can be finely granulated, including honey that has begun to ferment. Honey for creaming should be in the 17.5 to 18% moisture range. Finely granulated honey made from honey in this moisture range will be neither too hard nor soft.
6. **True** The antibacterial property of honey has been known for many years. Honey is not a suitable medium for bacteria for two reasons- it is fairly acid and it is too high in sugar content for growth to occur. This killing of bacteria by high sugar content is called osmotic effect. It seems to function by literally drying out the bacteria.
7. **True** Creamed honey does not need to be refrigerated, but it may revert to a liquid state after being stored under warm conditions for an extended period of time. It cannot be brought back to a creamed state, unless the complete granulation process is repeated.
8. A) 52° F
9. D) Carbon Dioxide
10. Honey is considered to be fully ripened when the bees seal it in cells with beeswax caps.
11. Automatic uncappers use several different techniques to remove the wax cappings: 1) horizontally mounted pair of heated, serrated knives that saw through the honey cappings on each side of the frame as it passes between the reciprocating knives; 2) series of small short chains attached on one end to a rotating drum; 3) combs are placed horizontally on a stainless steel wire conveyor that moves the combs through two stainless steel flails, one above the combs and one below the combs and 4) a rotary knife uncapper similar to the "chain flail" models.
12. At times it is important to remove the new honey crop from the hive when it is fully ripened as quickly as possible for several reasons: 1) some honeys crystallize rapidly so it is important to extract them from the combs before they crystallize; 2) if multiple flows are a characteristic of the apiary site, prompt removal will prevent the mixing of the floral sources; and 3) prevents the bees from tracking across the new, white wax cappings and darkening them with pollen and propolis residues.
13. The advantage of using bee escapes to remove bees from honey supers is that it can be done without the bees becoming aggravated and the beekeeper being exposed to the defensive behavior of the colony. Disadvantages to this technique include: 1) two trips, a day or two apart are required to the apiary to allow bees time to exit the supers; 2) inconvenient for bee yards located away from the beekeeper's residence; 3) the supers must be in good condition or robbing may be encouraged in supers that cannot be defended by the bees; 4) bee escapes are most effective in clearing bees from one super at a time; 5) bees will not readily leave brood that the supers might contain, when queen excluders are not used; and 6) the bee escape can become clogged with bees which plugs the device and prevents bees from exiting correctly.
14. Reduce the moisture content of honey and improve the efficiency of extracting it from the combs.
15. Honey is often heated to improve flow (movement) and straining efficiency. Heat is also used to dissolve sugar crystals present within the honey, delay granulation, and kill the yeasts that cause fermentation.
16. Of the innumerable plants visited by honey bees, comparatively few produce nectar or pollen that is poisonous to bees or their brood. Fortunately, the honey produced from such plants is seldom injurious to man.
    California Buckeye
    Black Nightshade
    Death Camas
    Dodder
    Summer Titi or Leatherwood
    Spotted Locoweed
    Snow-on-the-Mountain
    Mountain Laurel
    Seaside Arrowgrass
    Whorled Milkweed
    Western False Hellebore
    Yellow Jessamine
    Tansy Ragwort
    Rhododendrons
17. Commercial processing plants frequently use high pressure filters containing a series of filtering paper sheets to filter the honey prior to bottling. Diatomaceous earth, a white or cream colored filtering agent, composed of minute siliceous skeletons of unicellular or colonial algae, added to the honey prior to filtering makes the filter operate more efficiently.
18. Over time, stored honey will darken in color and will undergo slight chemical changes that can be detected.

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

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

Richard Taylor

# Bee Talk

"To treat for mites, and be successful, a July or August treatment seems right."

What a bloom on the Black Locust trees this Spring! All over the hillsides and cascading over the highways and, for once, the rain held off pretty well, making conditions right for a flow of this delectable honey. In other years, this would fill me with rejoicing, but this year it brought only a sense of depression, because I do not have enough bees to gather it. Hardly anyone does. The trees have bloomed to no purpose.

It was certainly the worst Winter for bees in American history. The news media have given it major attention, as honey prices soar. The consequences for bee-pollinated crops are yet to be felt.

Are we going to see more losses like this? I don't think we need to. Mr. Andrew McKinnon, in Ohio, told me about a survey his beekeeping association made, the results of which seem pretty revealing. They contacted 62 beekeepers owning a total of 902 colonies. Of these, 82 percent were dead in the Spring. But the loss in those treated with Apistan in July was only 25 percent. Of those treated the last of August, the losses ranged from 25 percent to 75 percent, and of those treated in September or later, the loss was 80 percent. Some, apparently, were not treated at all, resulting in the higher overall losses.

So the lesson seems clear. We're going to have to treat our colonies for *Varroa* mites by early August, I would guess, and apparently we'll need to treat them again early in the Spring. Some day we'll have bees that know how to defend their colonies against these mites. There are already encouraging signs of this. Then we'll be able to go back to the kind of beekeeping we once knew.

Meanwhile, there are the tracheal mites. I don't know how much of my loss this year was due to tracheal mites, but I decided to start using grease patties. I got a can of shortening and a bag of granulated sugar, and noticed something that had not been pointed out to me. The cans of shortening all look pretty much alike, but read the labels. Some are part animal fat, others pure vegetable fat, and it seems to me we should use only the latter. I had been told to warm the shortening up before trying to mix it with sugar. A few friends, not having been warned about this, just put the sugar and shortening in a mixer and soon had it flying all over the kitchen. So I scooped out a pound or two and put it in our microwave for one minute, only to find it all turned to warm liquid. Dear me! Things were not going very well. But then when I incorporated the liquid shortening with what was still in the can and mixed it all up good with a big spoon, it came out about right. Then I added what seemed to me about double that amount of sugar, maybe a little extra to sweeten it up for the bees, and let the electric mixer do the rest of the work, with an occasional brief warming in the microwave.

I was finally pretty well pleased with my work, and went off to one of my yards to treat the bees with my concoction.

I've been having a bit of a smoker problem, so now I'll digress for a moment to say something about that. I won a beautiful big smoker at the E.A.S. last Summer, as a reward for recognizing a picture of Jim Tew as a baby. But that smoker burns up the smoker fuel so fast that I was wasting fuel, and time, keeping it loaded. Solution: Stuff some grass into the smoker after it is lit. That solved the problem completely.

There was another little problem, too, and that was my bee gloves. After you have rinsed the stickiness off the gloves a few times, and they have dried out, the leather becomes hard and stiff, and pretty soon you have cracks, and the gloves are not much good. The solution to that is to rub neat's-foot oil into them. So I picked up a little can of that at the hardware, and made my gloves all soft and nice before going to work with the grease patties.

Some beekeepers make up the grease patties in advance, all about the same size, sandwiched between pieces of paper. I see no reason for that. Colonies differ greatly in strength, so it doesn't make sense to use the same size pattie for each. So I just took a large bowl of the mix to the apiary and ladled out dollops of it more or less according to how strong the colony seemed to be.

The usual instructions are also to lay the grease pattie over the top bars in the brood chamber. I chose instead to distribute the mixture, by putting a glob here and another small glob there, pushing it down a bit between the top bars. This, it seems to me, gives a better exposure of more bees to the substance.

I think I did a pretty good job, and it should work. I noticed that when bees fell into the bowl of the mixture, they immediately extended their tongues, and I also noticed that, soon after, they were grooming themselves with their legs, in response to the grease. I think the tracheal mites will tend to leave them alone.

One final note: Beekeeping is always filled with surprises, and this Spring the bees presented me with two. A lady called in early June to say there was a swarm of bees in her yard. That astounded me, because I couldn't imagine any colonies strong enough to swarm. But it was a big

*Continued on Page 484*

# Questions?

## Wax Moths

**Q** **My problem is wax worms. What can I do to get rid of them, and how can I prevent them from getting a start?**

**Arol Oakland**
**Clanton, AL**

**A** This question keeps coming up. The best defense against wax worms is strong colonies. Wax moths hide in cracks and holes, and the worms immediately invade any colony that is under stress or in decline, whether from mites, laying workers or whatever. In the North, they are not a big problem until late Summer. A strong colony can always keep wax worms in check. When beekeepers conclude that wax moths have killed off a hive of bees, it is almost always the case that something else went wrong first, resulting in a weakened colony.

## Going Home

**Q** **I have been collecting swarms with a vacuum system for three years. It works well with swarms on bushes or trees, but when I try to get the bees from buildings or trees I lose most of the bees as soon as I get them into a super. How come?**

**T. C. Koronich**
**Novelty, OH**

**A** A swarm of bees, upon emerging from a hive (or other cavity) instantly abandons its orientation to that hive. But when they are not in a swarming state, they have a very fixed orientation to their hive (or nest location) and will go right back to it, sometimes over a distance of a couple of miles. This explains why your system works in the one case and not the other.

## Liability

**Q** **What is your liability for personal injury or property damge to customers who purchase honey at your self-serve honey stand?**

**Cheryl Wilkinson**
**Arley, AL**

**A** I have never been concerned about this, for I cannot imagine how anyone could be injured or suffer property damage by purchasing a jar of honey from me, and I think any such claim would be speedily dismissed. With respect to the larger question that sometimes worries beekeepers, of someone getting stung and bringing a lawsuit, it should be noted that if your bees are on private property and away from any thoroughfare, and a "no trespassing" sign is posted, then you have no duty of care toward any trespasser who is on that property without your knowledge or consent, and hence no liability if he gets stung.

**Editor's Note:** Even with well-marked and protected apiaries, bees can be considered an attractive nuisance. At least be aware of what your insurance company would do if confronted with such a question.

## Milkweed Trap

**Q** **Do bees sometimes get fatally entangled in milkweed pollen? I sometimes find balls of bees flying from the hive, and in the center of such a ball is a bee tangled with milkweed pollen. I have a large stand of milkweed near my hives, covered with bees, but sometimes I find one on a blossom tangled up, and have even seen a few dead ones. Is this plant more harmful than good for the bees? I'm thinking of mowing it down next year.**

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

**A** Milkweed is a primary honey plant where it grows in abundance, and big honey yields are sometimes reported. But your observations are correct; the bees get entangled in the pollen and can perish as a result. I know of no other honey plant of which this is true, and it is a very strange property for any pollen to have, given the plant's dependence on pollinating insects. I would not advise you to mow it down.

## Comb Honey Pollen

**Q** **I sometimes find pollen in my comb honey. Most supers have none at all, but then I get one in which the sections are heavily plugged with pollen. How come? And how can I prevent that?**

**Duane Waid**
**Interlaken, NY**

**A** Plugs of pollen in the cells of comb honey can be a serious problem. Sometimes they cannot be seen easily except by holding the sections up to the light. They are harmless, but they usually taste terrible, and someone biting into pollen and not knowing what it is could be quite upsetting. The cause of this is bees, by nature, store pollen right above the brood nest, so when a comb honey super is very close to the brood nest, it can get pollen in it. This never happens except in the bottom super, that is, the first one to go on the hive, this being next to the brood nest, and it very rarely happens except with a single-story hive. It is one of the chief drawbacks to producing comb honey by the shook swarm method. The solution is (1) try to have honey in the hive before the first super goes on, as this acts as a barrier to pollen storage above it, and (2) sell any pollen-plugged honey only to someone you can personally explain it to, and at half price. If the buyer understands what it is, he will think of it as a bargain.

## What Color?

**Q** **Does it make any difference what color you paint a beehive?**

**Anon.**

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*Q & A ... Cont. From Pg. 483*

**A** This question comes up often. I have never thought it made enough difference to matter, unless the hive stands in the open sunshine, in which case it is important that it not be painted dark. I once knew a commercial beekeeper who painted all his hives black, claiming that they wintered better and produced better. This might be worthwhile for an apiary that gets the morning sun but is shaded in the afternoon. Mr. Joe Curtis, an Ohio beekeeper, paints one end and one side white and the other end and side black. The darkened sides face the sun through the Winter and the light sides face the sun in the Summer, these rotations being made in June and August. He strongly believes that the colonies winter better and produce better. There is no doubt that such an arrangement would significantly affect hive temperature.

*Questions are eagerly welcomed. Send them to: Dr. Richard Taylor, Box 352, Interlaken, New York 14847 (not to Medina), enclosing a stamped, addressed envelope for response.*

*BEE TALK ... Cont. From Pg. 482*

one, and I got there to find them going into a hole in an outbuilding, where I recalled that there had been a nest of bees years before. So I erected a scaffold near the hole, and fixed a screen cone over the hole to trap the bees out. A couple days later, I found almost all the bees going in and out of my hive.

The other surprise was this: I opened one of my hives to find that the queen had a blue dot painted on her back. How come? I never mark my queens, and that was not the colony that had survived the Winter anyway. None of the queens that came with my new packages were marked. I'll never figure that one out. BC

*Richard Taylor is a philosopher & lifelong beekeeper who lives in the Finger Lakes region of New York. You can reach him at Box 352, Interlaken, NY 14847.*

*Comments and questions are welcomed. Use Interlaken address (not Medina) and enclose a stamped addressed envelope for response.*

# Gleanings

AUGUST, 1996 • ALL THE NEWS THAT FITS

## BEE BUSINESS BROKER

Morris Weaver announces the opening of a new business venture. Morris Weaver Enterprises is a brokerage business specializing in the beekeeping industry.

If you have bees, beekeeping equipment or bee products to sell contact Morris about listing your items. Also if you are looking to purchase beekeeping items or products contact him. It is Morris' job to put buyers and sellers together and assist in making a deal.

Recently Morris sold his beekeeping operation which he operated as Howard Weaver & Sons. Morris is a third generation beekeeper and has over 40 years of beekeeping experience. Morris has extensive experience in producing and marketing queens and package bees world wide. In addition he owned and managed colonies for honey production in Texas and the Mid West.

Morris has extensive contacts in the industry. He has been active in the Texas Beekeeping Association, The American Beekeeping Federation, Inc. and the American Bee Breeders Association. He has served on the executive committee and as president of each of these organizations.

For information the address is RR 4, Box 24, Navasota, TX 77868, Phone/Fax 409-825-7714.

### Georgia Entrant Takes Top Prize

## 4-H ESSAY WINNERS ANNOUNCED

"Without [honey bees], our entire lives, from economy to food supply, would change," concluded the top essayist in the 1996 Amer. Beekeeping Federation 4-H Essay Contest.

The essay by 18-year-old James Ellis, Jr. a hobbyist beekeeper from Mitchell, GA was judged the best of 24 entries in the contest. Rita Wallace, 14, of Glenvil, NE, wrote the second place essay, and the third place writer was Nicholas Saconchik-Pytel, 16, of Tallahassee, FL. The assignment for the 1995 contest was "How Honey Bees Ensure Our Food Supply."

James says he got started in beekeeping when he was 13, being taught by a neighbor; when the neighbor died in 1993, he left James 10 more hives of bees. A 1st place winner in the Georgia 4-H Entomology project, he plans to continue his interest in bees through college and beyond. His first place essay earned him a $250 cash prize.

Rita lives with her family on a small farm, where they raise sheep and poultry. Her second place essay won a $100 cash award.

Third place essayist Nicholas is an honors student at the Florida State University School and plays in two community youth orchestras. For his essay, his second try in the contest, he got a cash award of $50.

The three winners and each of the other 21-state winners will receive a copy of Richard Bonney's "Beekeeping a Practical Guide" donated by Mann Lake Ltd. of Hackensack, MN. Special recognition is made of the artwork Aaron Nice, 11, of Tillamook, OR, used to illustrate his essay, in which he termed bees, "God's Miracle Producers."

For 1997 Essay Contest, 4-H'ers will be asked to write about a "news event" in the bee colony. Some examples are "Bees Robbed of Hoard of Honey" (beekeeper harvests the honey crop); "Queen and Loyalists Flee Anarchists" (swarm leaves to set up new colony); "Helpless Drones Cast Out by Workers" (drones driven from colony in preparation for winter); "New Queen Takes the Throne" (bees replace falling or dead queen bee). Using a news report format, the student is to develop an essay exploring the chosen "even" and relate that event to the life cycle of the honey bee colony and to the role of honey bees in our everyday lives. Complete rules and details on entering are a available from local 4-H agents.

## USDA NEWS

### Ag Secretary Appoints Members . . .

Secretary of Agriculture Dan Glickman announced the appointment of four members and four alternate members to serve on the National Honey Board.

All appointees will serve three-year terms that began April 1, 1996, and will end March 31, 1999.

Glickman appointed Joseph F. Rossman, Moultrie, GA, to represent Region 6 honey producers. Charlotte W. Randall, Umatilla, FL, was reappointed as Region 6 alternate producer member. Region 6 includes Florida, Georgia and Puerto Rico.

Reappointed to represent packers is Shirley W. Miller, Midvale, UT. Thomas E. Burleson, Jr., Waxahachie, TX, was appointed as alternate importer member.

Appointed as public member is Mary E. Templeton, Morgantown, WV, with Dorothy E. Wood, San Diego, CA, appointed as alternate public member.

The Honey Board administers an industry-funded national research, promotion, and consumer information program to increase honey consumption in the United States and abroad. The Agricultural Marketing Service, an agency in USDA's marketing and regulatory mission area, monitors board operations.

The board consists of 13 members and 13 alternates. Seven producer members represent seven regions of the United States. The other six members represent importers and exporters (one member each), packers (two members), cooperatives (one member), and the public (one member).

### . . . Allocates Fewer $$$ . . .

The 1996 allocations of $90 million to 66 U.S. trade organizations for export promotion activities were announced by Agriculture Secretary Dan Glickman (May 3). These allocations are made under the Market Access Program (MAP), formerly called the Market Promotion Program (MPP). Glickman said, "This program is about putting U.S. high-value products in the grocery baskets of foreign consumers and, in the process, creating jobs here at home." Funding for the MAP program has declined by more than half, from a high of $200 million as recently as fiscal year (FY) 1992 to $90 million in FY 1996. The drop in MAP funding has caused some program participants to curtail ongoing marketing programs and forced others to scale back plans to expand marketing activities in emerging markets at the time when new opportunities are arising in the wake of market-opening trade pacts such as the Uruguay Round Agreements. The Honey Board received $130,000.

### . . . And Closes More Offices.

The U.S. Department of Agriculture reorganization of field offices is progressing on schedule. In a speech at a USDA Service Center Partnership Conference (July 9) Agriculture Secretary Dan Glickman said, "We are well on the way to our goal of providing more efficient service for our customers. Our Service Centers will continue to provide customer service, efficiency and a reduced cost for taxpayers." At the end of June, 552 USDA field offices of the Farm Service Agency, natural Resources Conservation Service and the Rural Development agencies (Rural Business-Cooperative Service; Rural Housing

*Continued on Next Page*

*USDA ... Cont. From Pg. 487*

Service; and Rural Utilities Service), had moved or closed. This involved 171 moves and 381 closures in 437 counties. At the end of 1994, USDA Service Center agencies had offices in approximately 3,700 locations. USDA is well on its way to streamlining down to the Secretary's target of approximately 2,500 service centers, by December 31, 1997.

## Sugar Wins Again

Meanwhile, the USDA's Commodity Credit Corporation (CCC) announced (July 5) the regional loan rates for 1996-crop raw sugar and refined beet sugar. The national (weighted-average) loan rates for 1996-crop will be 18 cents per pound for raw cane sugar and 22.90 cents per pound for refined beet sugar as specified in the Federal Agriculture Improvement and Reform Act of 1996. The CCC will offer nonrecourse loans for the remainder of FY 1996 for 1996-crop sugar eligible for loans.

Honey no longer has a nonrecourse loan program available.

# NEW HONEY BUSINESS TAKES OFF

AUCKLAND - A small New Zealand company specializing in products offering the healing and beautifying qualities of honey is getting ready to spread its wings after a successful exhibit at the Cosmoprof Asia '96 beauty fair in Hong Kong.

Auckland-based Honey and Herbs New Zealand Ltd. was created four years ago by Pamela Reade and produces creams and balms using manuka honey from her husband Charles' 50 hives.

Manuka is a native New Zealand shrub unique to the country and the honey has been found to have natural anti-bacterial benefits. The Waikato University in New Zealand's central North Island is conducting trials of manuka honey and there is the prospect this could lead to it being registered as a medicine.

During the Hong Kong fair the Reades obtained 55 solid contacts from foreign companies interested in distributing and selling their honey-based products. One, from Thailand, sells its products in 6,000 stores and is interested in expanding its product range.

"The worth of honey as both a medicine and beautifier has been known for thousands of years so when some trade buyers were taken aback at that thought we were a little surprised," Mrs. Reade said.

Honey and Herbs has a limited distribution in California but that could soon expand as the Reades now are evaluating two approaches from American would-be distributors.

When the Reades first started they worked craft shows and trade fairs.

"In those days I would work from the kitchen, deciding ingredient quantities by the teaspoon measure," Mrs. Reade said.

As the popularity of their products grew they began wholesaling them through pharmacies and selected retail outlets.

Now the products are available in 400 outlets throughout New Zealand and the Reades have pharmaceutical houses prepare their products.

The products include honey mixed with cream as a balm for rough hands, a lipstick for chapped lips and a beautifier for skin.



# HONEY BOARD NEWS

## Referendum Time

The U.S. Department of Agriculture is conducting a referendum among honey producers, producer-packers and importers Aug. 1-30.

Lon Hatamiya, administrator of USDA's Agricultural Marketing Service, said producers, producer-packers and importers will vote on whether to continue the national research, promotion and consumer information program for honey.

The program's authorizing legislation, the Honey Research, Promotion, and Consumer Information Act, directs that the secretary of agriculture conduct a referendum among eligible honey producers, producer-packers and importers every five years after the date the program began. The referendum is to determine whether those voting favor continuing the program. The first continuance referendum on the honey program was conducted in August 1991.

Known honey producers, producer-packers and importers will receive ballots to cast in the referendum. Persons who produced, produced and handled or imported honey between Jan. 1, 1994, and Dec. 31, 1995, are eligible to vote. Any eligible producer, producer-packers or importer who does not receive a ballot should contact Richard Schultz, the referendum agent.

Persons who have received an exemption from assessment for the entire representative period are ineligible to vote.

Details of the referendum appeared in the July 2, Federal Register. For additional information, contact Richard Schultz, Research and Promotion Branch, Fruit and Vegetable Division, AMS, Rm. 2535-S, P.O. Box 96456, Washington, D.C. 20090-6456 or tel. (202) 720-5976.

## Applebee's New Menu

Applebee's, a 715-unit family-style restaurant chain, will launch a new honey chicken salad this summer.

Honey Almond Chicken Spinach Salad is described as "Fresh and then some!" Fresh spinach tossed in a tangy Oriental vinaigrette is topped with strawberries, almonds, red onions and slices of honey-grilled chicken. Each chicken breast is drizzled with more than 1/2 ounce of honey.

This honey-of-a-salad will be featured on menu clip-ons, table tents and in free-standing newspaper advertisements. All promotional pieces feature the National Honey Board's honey bear logo.

Applebee's restaurants are located in 45 states. The salad will be part of the chain's Summer Fare '96 promotion, and will be available May 27-September 1.

## September – Honey Month

You're probably busy as a . . . um, well, bee right now. But it's not too soon to start planning which of your local newspapers and radio/television stations to contact about National Honey Month. September is National Honey Month and it is also the traditional beginning of honey's high sales and usage season – a great time to "pitch" your honey business.

You don't have to be a big company to get attention. "Often, media people will prefer newsy items from small local businesses," said Mary Humann, marketing director for the National Honey Board. "The main thing is to remember that publicity results from a good story. Think about a story in terms of what will be interesting to readers and not what you will get out of it."

You might be surprised at what the media considers newsworthy. Maybe this is a good year for a rare type of honey plant – and you expect to have some honey that people might not be able to find in the grocery store. Community service events such as a honey-tasting or a demonstration or lecture at a local school are especially suitable for the community bulletin board slots offered by the media. Don't overlook the value of a positive story. You might have the news "90-year-old grandmother packs her own honey"; or "60-year-old business still in the family and things are buzzin'."

The Honey Board is ready to help with news releases full of story ideas, recipes and honey and honey bee facts. National Honey Month press kits will be available in June, so you will have plenty of time to plan your promotion. To order your press kit, call Jami Yanoski at (800) 553-7162.

## How Ya Gonna Keep 'em . . .

The National Honey Board will participate in the SIAL '96 food show, to be held October 20-24 in Paris, France.

SIAL '96 will be the largest food show in Europe in 1996, hosting 100,000 trade visitors from all over the world.

The National Honey Board has arranged for exhibit space at SIAL '96 to promote U.S. honey and is inviting current or potential exporters to display their honey products and promotional materials in their booth at no charge.

For information, contact Gretchen Lichtenwalner at the Honey Board office, (800) 553-7162, for further details.

# INDUSTRY LOOSES FURGALA

Dr. Basil Furgala, 64, of Stillwater, MN, died May 11, 1996. Survivors include his wife Nettie; a daughter, Mary Carey; two sons, Perry and Jim; four grandchildren; a sister, Kay Dankewich of Winnipeg; and a brother, Michael of Ontario.

Basil began working with honey bees in the mid-1950s in Manitoba. He received his Ph.D. at the University of Minnesota in 1959. Since then, he dedicated his life to research, extension, teaching and public service in apiculture. In the early 1960s he was a research scientist for Agriculture Canada. In 1967 he returned to the University of Minnesota as professor of Entomology. He advised many graduate students, taught dozens of classes and short courses, and was extension specialist for apiculture in Minnesota. He served as National Apicultural Extension Specialist from 1981 to 1984, and on several national technical committees since then.

Basil's research efforts were recognized, and with time he became an international expert on nosema, sunflower pollination, and colony management systems. His areas of bee research were as diverse as his students. Research projects over the years includes: Legumes and sunflower pollination, nosema, viruses, nectar studies, colony management, queen evaluations, and the honey bee tracheal mite. He received many research awards during this career, being the first to receive the combination of these three awards: EAS, WAS, and Dutch Gold Honey Bear.

Dr. Furgala had a rare gift in his ability and ambition to share his research results with the bee industry. He chose to conduct applied research and enjoyed both the academic environment as well as beekeeper's meetings.

The bee industry has lost a research leader, a great teacher, and a significant amount of honey bee knowledge. Basil will be sadly missed by all.

*submitted by Steve Duff & Mark Sugden*

## 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; $35 for 12 issues; sample $6. Rural Heritage, 281-B Dean Ridge Lane, Gainesboro, TN 38562.

WANT INFORMATION ON EXOTIC animals & the marketplace? Subscribe to Wings & Hooves. $16 yr. Dept. 1, Rt. 1, Box 32, Forestburg, TX 76239-9706.

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 on request. $1.

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

IBRA: INFORMATION AT YOUR FINGERTIPS. IBRA is *the* information service for beekeepers, extension workers and scientists. Our members support this service and enjoy the benefits of belonging to IBRA, which includes *Bee World*. We need your involvement - join IBRA - support this important information network and extend your beekeeping horizons. For more information contact: IBRA, 18 North Road, Cardiff CF1 3DY, UK. Telephone (+44) 1222 372409. Fax (+44) 1222 665522.

SCOTTISH BEE JOURNAL. Monthly magazine. Sample copy from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. $4.00 per annum.

BEE CRAFT – Monthly journal of the British Beekeepers Association. Subscription, including postage is £13.68 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.

IRISH BEEKEEPING. Read An Beachaire (The Irish Beekeeper) Published monthly. Subscription $15.00/year, post free. Mr. Seamns Reddy, 8 Tower View Park, Kildare.

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

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 $30.00 (Aus.), AirMail $50.00 (Aus.). Write to: Victorian Apiarists' Association Inc., Editor, Ms. Judy Graves, 23 McBride Rd., Upper Beaconsfield, Victoria, 3808, Australia. Sample $3 (Aus.) on request.

ANIMALS EXOTIC & SMALL The premier journal of the Exotic and Miniature animal industry. Subscriptions $10.00/one year, $19.00/two years, $29.00/three years U.S.MasterCard, Visa, American Express and Discover welcome. AES, 1320 Mountain Ave., Norco, CA 91760-2852 (909) 371-4307 FAX (909) 371-4779 e-mail AES01@aol.com.

THE NEW ZEALAND BEEKEEPER. published 11 times a year Feb - Dec. by the National Beekeeper's Association of NZ. Write for rates & indicate whether airmail or surface mail. NZ BEEKEEPER, Farming House, 211-213 Market Street South, P.O. Box 307, Hastings, NZ.

SOUTH AFRICAN BEE JOURNAL. The official organization of the S.A. Federation of Bee-Farmers' Associations. Published bimonthly in English and Africaans, primarily devoted to the African and Cape Bee races. Subscriptions including postage (six copies). 1995 all subscribers outside of South Africa R100-00 surface mail, payment to be made in S.A. Rands. NB. Sample copies only available on receipt of a donation. P.O. Box 41 Modderfontein, 1645, South Africa.

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queens from outside the USA.)

When you write be polite – enclose a self-addressed stamped envelope if you expect a reply. When calling be courteous insuring your questions are answered on your phone bill not upon mine by waiting and calling a bit after nine (p.m.). But please don't arouse me out of my slumber so call before 10 in the p.m. and not any later. We live in the Eastern Time zone so you see if you live in another adjust properly. We thank you for helping us keep the costs of HIP down.

*Jack Griffes (313) 856-8845*
*Country Jack's Honeybee Farm*
*Honeybee Improvement Program*
*7056 Samaria Road*
*Ottawa Lake, MI 49267 USA*

*NEW READING ... Cont. From Pg. 451*

dictable ripple effect: "Once pollinators and seed dispersers abandon a site," the authors say, "the plant species that they formerly serviced begin to decline as well."

"Protecting threatened pollinators is essential to our country's food security," Buchmann and Nabhan conclude, "to say nothing of protecting tens of thousands of other plants and flowers that depend on nature's gift of pollination for reproduction."

Buchmann and Nabhan argue that we must fundamentally change our point of view: "There's not a single cause or a single enemy, but there is a single challenge. As a society, we need to begin recognizing the debt we owe our 'forgotten pollinators.' We must stop viewing pollination as a free service from Mother Nature that requires no effort on our part to sustain and protect."

All of the above came from a press release issued by the publisher when this book came out in June, and after reading the book, it all seems straight forward. We have, as a species, destroyed or reduced much of what pollinators other than honey bees use as habitat and food. And when reading this book, and I recommend that you do, try and remain objective and not let your knowledge and experience as a beekeeper cloud your reactions, judgement or opinions.

The author's predominant message is clear, and important. It is unfortunate they compared wild pollinators to the beekeeping industry, because their analysis, assessment and predictions of beekeeping are seriously in error, and can easily lead an unknowing reader to conclude beekeeping, as an industry is not only dead, but already buried. Their data, relative to our industry, is dated, invalid, limited and myopic in scope.

And that's too bad, because that is the only flaw (major to us, minor to the book) in this otherwise practical, and informative work.

I do recommend you read this. Just skim over the beekeeping parts.

*Kim Flottum*

# Display Index

I think we have before us a prime opportunity to discover the answer to my question. If the answer is affirmative – that is, if a healthy bunch of large beekeepers actually can *and will* cooperate then I think we can start working toward eliminating beekeeping's contribution to the agricultural chemicals used each year that Mark Winston told us about. I don't think we have to look further than the nearest hive to see we each have a mite problem or two in common with virtually every other beekeeper in the nation and most of the world. I know that some scientists still don't believe in genetic mite resistance despite the obvious evidence of it in the real world – that's tunnel vision to the max guys and gals – rip off the blinders and see.

I fully understand that resistance means being able to put up a good fight and thereby normally overcome adversity but it does not mean being immune to the problem. Thus under particularly adverse circumstances resistant stock can be overcome while immune stock (if it existed) would not be. The whole idea of having resistance is to reduce the damage done – below an economic threshold thus eliminating the need for the routine use of chemicals. Immunity is far better than resistance but is also generally unobtainable (via selective breeding) while a high level of resistance is more often obtainable and generally is adequate. Using resistant varieties is an important part of making an Integrated Pest Management (IPM) program most effective in reducing chemical use. Currently there are no strains of bees so resistant to *Varroa*. There are, however, strains of bees that show real promise and I believe that if we continue to breed toward *Varroa* mite resistance from a HIGHLY Tracheal mite resistant stock base we can and will eventually have bee stock that is HIGHLY resistant (but not immune) to both mites. I have been acting on that belief for four years now and for three years I have coordinated a cooperative breeding program, the Honeybee Improvement Program (HIP), which has the long term goal of developing bee stock which along with high production and excellent overwintering will have *over* 80% UNTREATED thriving survival. This is not a two-minute project and we fully realize that. Maybe you and I will not live to see the day when resistant stock makes routine chemical use to prevent mite loss a gladly forgotten piece of beekeeping history but what a gift we could give to our grandchildren and greatgrandchildren if we work toward that together. We cannot change the past but I believe we could change the future – that is IF enough large beekeepers can cooperate – can they? (I don't mean to shut out you hobbyists but it takes hundreds of colonies to find 20 or more each year worthy to face the Untreated Survival phase of HIP testing. Clubs of hobby beekeepers could function as a large beekeeper IF they have ultra cooperative members.

We hope you will realize you could do your part – when working together no part is to meager. For together each part is a part of a sum. We can't promise you gold for we have none to offer but a challenge indeed now that we can proffer. Though we ask you to work with others it is true; the choice you must make is all up to you. Will you leave it to others or do your own part? Will you bring your high producers to a common test yard? Once there two HYG tests upon them will you run? Will you look for bee-damaged mites until you're all dizzy? Will you haul the flunkies to some other yard(s) then leave only the high producing HYG-mite chewers untreated as the ultimate test? Will you cherish the untreated bees that survive when most perish? Will you help spread their genes far and wide by putting their daughters in each of your hives? Will you look at their daughters, choosing only the best, on them run the tests and discard all the rest? Will you do it each year 'til your own smoker goes out, 'til your hive tool and veil are hung up and not gotten back out? Will you help make things better for those coming after whether it is a stranger or your own son or daughter?

We'd be glad to help you start helping yourself it is true but can't help you at all if you won't lift a finger. If you've tried and you've failed nearby folk to convince; with us you may join after proving you fit. Our tests take a year so don't be in a hurry but when they're complete send the results without worry. We just need to be certain that you are a worker; drones need not apply for they are all shirkers. The drones think only of "what's in it for me." The workers store treasure they never see used so that others that follow can carry on in their shoes; making the world a much better place than ever it would be if they weren't about.

And if in your travels you happen to find any *multi-year* UNTREATED thriving survivors please send us the queen even if you don't test her. Test her and graft off her first if you possibly can – make certain such treasures are put to best use. (Due to severe bee stock import restrictions – please don't send us

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# Cooperation?

Jack Griffes