

GLEANINGS IN



SEPT '89

# BEE CULTURE





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**COVER . . .** *September is National Honey Month...a month to promote versatile, natural honey! In addition to its on-going publicity efforts, the National Honey Board has developed special programs to bring the consumer and the foodservice industry's attention to honey and beekeeping. The Board will be releasing special color as well as black and white recipe releases to newspapers across the country. One release will tell consumers about the many forms of honey. Another features honey as a "comfort food" with traditional appeal. In addition, honey trivia cards will be sent to radio and television personalities across the country. Join in the Honey Month Promotion. A special packet with honey trivia, recipes, releases and a photograph has been developed for you to use with your local media. Plan now to promote September as Honey Month. For your packet, write or call Barbara Smith at the National Honey Board office: National Honey Board, 421 21st Avenue #203, Longmont, CO 80501, (303) 776-2337.*

PHOTO BY BRUCE WILSON



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# THE INNER COVER

## RIGHT ON!

Recently there was a meeting in Washington D.C. sponsored by PETA — People For The Ethical Treatment Of Animals. Yes, the Animal Rights folks. And they're looking at beekeeping. The leader of the pack gave a talk during which she mentioned the honey harvest. Unfortunately, she was going on hearsay evidence, since she received her information from a friend who heard it from somebody who knew a beekeeper. Are you worried yet?

Their frontal attack focused on the fur industry, and most of the meeting was about the mink, fox and other warm-and-fuzzy raisers in the U.S. But they covered a lot of other bases too — poultry, dairy, laboratory animals... and honey bees.

The main speaker picked out two aspects of our craft that particularly bothered her — clipping queens and, of all things, brushing bees off combs when harvesting. Both were given the once over as inhumane treatment, and not to be considered ethical.

I contacted the folks at PETA after I heard about the meeting. They sent me some information on their group, and specifically on how they felt about bees, beekeeping and honey.

They don't seem to have a problem with those beekeepers who don't exploit bees, and have a symbiotic relationship with them. These beekeepers take excess honey and allow the work of the hive to proceed unimpeded. Commercial operations, however, work in a far different way, according to the Rights activists. Their opinion is that with profit and ample production the goal, all the honey is usually taken and the bees are given a cheap substitute to get them through the winter. They even infer that sugar syrup is made into honey and then harvested and sold as pure.

Proof of these statements, and further background in beekeeping is short, but the honey bee's role in pollination was at least mentioned.

Substitutes for honey are mentioned that do not include white sugar (another product they don't like, but the why's are not discussed), including rice syrup, molasses, sorghum, barley malt, and maple syrup.

I'm not sure what direction these folks will go with this. There certainly are bigger fish to fry if one is genuinely concerned about animal rights. The first shot has been fired, and there is almost always a second, then a third...

Be prepared.

If you would like to pursue the Ethical Treatment of honey bees further, contact the PETA people at P. O. Box 42516, Washington, DC 20015.

## WHERE'S THE MEMBERS?

"It's certainly easier to keep what we've got than to get a new body in here," said the president of a group whose meeting I recently attended.

"But both tasks are getting more and more difficult," she sighed, "and I don't know what we're doing wrong."

At another meeting the secretary said, "My job's getting easier every season. We haven't had a new member yet this year and we've already lost about 10% of what we had last year. Pretty soon it'll be just me, the president (if he doesn't move to Buffalo) and old Mr. Jones over there, but he's 99 years old now, and I don't know how much longer we can count on him."

These were not beekeeping meetings I was attending, though they certainly could be.

'Where's The Members' has become the lament of nearly every group around these days. And it doesn't matter whether you're a Lion or a Moose, a gardener or a beekeeper, the story's the same — declining memberships,

*Continued on Page 528*

# NEXT MONTH

October brings the autumn and the hectic rush of harvest slows a bit. Now we can stop and enjoy nature's last colorful fling before the winter time.

It also is a time to reflect a bit on the season past, and even on beekeeping's past. Next month we have a potpourri of events past — from Wisconsin, Minnesota and Iowa, here in the U.S.; and even some history from as far away as Germany and Bermuda. A glimpse of the past, next month.

But there's more for sure. The state of the art in breeding bees is in the equipment used, and Next Month we'll take a long hard look at the Harbo Large Capacity syringe used by many because of its versatility of design and ease of operation. If you're interested in Artificial Insemination, then this is for you.

But Artificial Insemination isn't the only craft that uses state-of-the-art equipment. High Tech Kitchen equipment — the microwave oven — can be used for melting honey or wax — and here's how, Next Month.

But there's always more. More on Associations, more What's New, and What's Not. And be sure and read the *Globe*, the industry's newest and hottest item. Current events and the people who make them. Business news you won't find anywhere else. USDA News not available to most, IRS facts and figures — *Gleanings Globe* is the place to be! Plus the regulars (and the occasional irregulars), all here — Next Month! □



# MAILBOX

## Cover Comment

I want to comment on the fine job done on the cover of your June, 1989 issue. It was really about perfect. I do a little amateur color printing and have done that slide, but I never achieved the "life" the June cover has. I was surely pleased to see it.

Chas. S. Hofmann  
The Hofmann Apiaries

(NOTE: Chas. Hofmann submitted the photo used on the cover of the June issue. Thanks for the kind words, we'll pass them along to our printer.)

## Bee Killer!

Here is a copy of an ad which appeared in the July 16, 1989 *Star Ledger*, a

state-wide publication in New Jersey. The advertiser is Harriet Carter Co. of North Wales, PA and the item of my concern is a Wasp and Yellow Jacket trap.

If such a trap has an attractant for wasps and yellow jackets, I worry that it would also be a "Black Hole" for honey bees since it uses sugar and water as bait. If this is the case, I would think that a warning of such a danger to good insects should be included with the product.

Robert P. Schwiegerath, Sr.  
Bridgewater, NJ

## Root Review

My interest in bees has been greatly stimulated by a copy of *The ABC and XYZ of Bee Culture*, published in 1920 by A. I. Root and E. R. Root. I obtained this book on sale at the Minneapolis

Public Library several years ago, and have been delighted by its articulate, philosophical, lovingly detailed contents.

Were time travel possible (and reading this book it almost is), how wonderful it would be to step back into the world of A. I. Root in 1865, when he looked up from his work at a swarm of bees passing overhead. Over 120 years later, his intelligence, curiosity, and dedication to the craft still ring loud and clear.

It is with great respect and enthusiasm, therefore, that I submit my subscription to your magazine. I look forward to many hours of enlightenment. May it evoke the same warm sense of reality that A. I. Root stirred in me.

Mark Anderson  
Bloomington, MN

## Swarm Sucker

In the June 1989 issue of *Gleanings*, John Turner asked for a device for retrieving swarms of bees. The Southwestern Ohio Hive Parts at 629 Lebanon St., Monroe, OH 45050, has or had just the equipment he is looking for. It is an air-tight box with a small hand vacuum attached to the top. A screened box is inside to catch the bees. The back of this box has foam to protect the bees being sucked in. A flexible hose is attached to the outside with extension tubes added to gain height with a special nozzle on the end to retrieve the swarm. Much like a shop vac, this creates a soft or light vacuum for retrieving swarms almost any place within reach in about an hour's time. When you have most of the bees, you remove the screened box inside so the bees stay cool. A soft piece of rubber, much like a hospital rubber glove with the fingers cut off, falls down on the inlet side of the screened box to prevent the bees from getting back out. The bottom of this box has a sheet of metal that you slide off when you are ready to rehive them.

I have used one for a few years and

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like it very much. I even made an extra inner box to take along in case I run into more swarms. The vacuum machine can also be used as a bee blower. The only drawback that I see is you must be near a 115 volt outlet. I use a 100 ft. extension cord and take a portable generator to use, if necessary. Write to them for more information. You may think this is expensive but when you consider the time saved, you may change your mind. I know I did.

Kleber J. Minich  
Natrona Heights, PA

### Do you know?

I have heard about a person named Wolfgang Laib. I only have the smallest of information but I understand he has built houses out of beeswax big enough to walk into. He also collects different types of pollen.

Do any readers have information on this person?

Bill Bartlett  
Star Route, Box 83d-1a  
Leonardtown, MD 20650

I would like to find a convenient (and uniform) nuc box to carry laying queens around during spring and early summer. I am sure I have seen an advertisement for cardboard (or styrofoam) nuc boxes for sale in your magazine. I have looked through all my past issues but am unable to find it.

Can somebody inform me of anybody who supplies these?

Bill Schnute  
Box 275 Dryden, MI 48428

### Heating Honey

The Bee Specialist is concerned that we avoid overheating honey (page 388). This may be the most critical instruction in a beekeeping syllabus because other facets of the craft are between the beekeeper and his bees, or other beekeepers. But when we give someone a jar of our surplus honey, it is representative of the entire beekeeping community. When I requested a sample of honey a beekeeper was running into 60 pound cans, he refused on the grounds that it had all been through his heater (a modified household water heater). Does his cynical remark that consumers should not be spoiled by too good a quality of honey reflect the view of other commercial producers as well?

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and flavor of the freshly extracted honey is thereby retained.

If readers have seen the film describing beeswax production in Kenya, they saw a hand press used to extract honey from combs (see also Fig. 58 in F. G. Smith's *Beekeeping in the tropics*, 1960). We imported one of these beautiful, sturdy machines from Mountain Grey in Great Britain to press cappings, and avoid the need to melt them. I am certain the author did not intend to imply the Japanese were the only beekeepers using presses in 1872. There are illustrations of presses in early texts such as J. Bruweiln (Berlin 1719), and a similar one in F. Desormes (Paris 1816).

Toge Johansson  
East Berne, NY

### Support the Honey Board

After reading in the June issue of the *Speedy Bee* the article about Honey Board Refunds up to 19.9%, I was disturbed. I am a commercial honey producer and packer in New York State. I can see honey sales and the demand for honey increasing. This is partly due to less honey in the hands of the C.C.C. and much less of the give-away programs. But much credit has to go to the work of the National Honey Board. Most beekeepers do not know how hard

our Board of Directors work in their committees to help promote honey. This honey comes from every state. The National Honey Board can only work if all of us give it our support. We can all come up with excuses to get refunds. I could use the several thousand dollars I have paid to the National Honey Board but this program can, and is, working.

If you are on the refund list, please give it more thought and don't come up with excuses. Give, and see how your dollars can work to sell more honey. Dan Hall and his staff of the National Honey Board can have a bigger and better program with 100% input by all beekeepers.

Edward Doan  
Hamlin, NY

### Speak Up!

This is as good a time as any to mention "integrity", whether it's concerning the captain of an oil tanker, or a beekeeper. There are no simple answers to travesties such as the oil spill in Alaska. The ramifications of that fateful day will be felt for many years to come.

How does this apply to beekeeping? Is it not so that we all have that special place within ourselves that tells us what we're doing is good, or maybe not so good? It is sometimes so easy to rationalize — using a chemical where

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one shouldn't, keeping terramycin in the hive during the honey flow (who will know), selling black market bees to Canada, putting fewer frames in the hive during pollination (that orchardist isn't going to check inside the hives), reporting how many hives or how much honey is produced during that year — the list goes on. It is clear that integrity requires continuous monitoring by each one of us.

Think of how tracheal mite and Varroa mite were introduced to the U.S. Maybe those beekeepers had no malicious intent but that's not good enough. We all have the responsibility for educating ourselves so that we know what we're doing. We're all part of the ecosystem of Spaceship Earth. We cannot afford to let our guard down.

It is true we do not live in Alaska, but the oil spill will affect us. It is also true we do not live in the Brazilian rain forest, but the deforestation there will affect us also. How about the forests here in Washington, one of our most precious commodities? Yet we stand by and watch them raped on a daily basis — at what price? We sell logs to Japan (and other countries); are the Japanese people going to help us when our denuded forests create mud slides, erosion so advanced that silt prevents hydroelectric dams from functioning, and forest fires become a raging inferno? We're all part of the ecosystem and everything affects us, no matter how remote it may seem.

You feel you want to do something? **'THINK GLOBALLY; ACT LOCALLY.'** A good place to start as a beekeeper is attending local and state beekeepers associations to learn and educate yourself first. Then help spread the good word about bees to local civic associations. Perhaps the most rewarding activity is to go to schools and give presentations to school children. The hope of the future lies in our young people. But mostly, don't be content to watch our precious resources polluted, raped or destroyed without speaking out. Never discount what a grass roots effort can do.

Alicia Alwyn  
Olympia, WA

## Who's Right?

I was surprised to learn from you that one of your readers thinks I am sometimes "dogmatic". I think I am neither dogmatic nor undogmatic; quite the contrary! And as I have pointed out

many times, my modesty is probably the most widely admired of my many virtues. I realized a long time ago that I know everything there is to know about beekeeping, and, for that matter, just about everything else as well. Therefore, my answer to any bee question is sure to be the correct one, and I see no reason to offer the opinions of others. But, dogmatic? Heavens, no!

Richard Taylor

### The Final Word

Although I agree with his general premise about misusing the language, I must take exception to F. Deer's letter in the July issue.

You've heard of 'people living in glass houses'...; a classic example of that phenomenon can be discerned in the above-named letter. With no difficulty I found four mistakes in his short diatribe. Although minor, even nitpicking, these errors should not be present in a critical discussion on proper use of the "American Language".

1. NAPOLEON - the correct spelling.
2. Illiterate or not, Gloria Steinem would not appreciate misspelling her name.
3. None=no one, or not one. The right

verb here is 'is', not 'are'.

4. In the last sentence, 'scratches' should be used, since the subject of his sentence is 'misuse', not 'words'.

P.S. Although I'm quite sure the slang term 'crapper' derived from Sir John Crapper's name, I'm less sure the far more common 'john' also did. Proof?

Verne M. Marshall  
Geneva, NY

I don't know, and rather doubt that anyone does, the origin of the term 'john', meaning 'toilet'. It certainly doesn't come from the name of a Sir John Crapper, since no such person invented the flush toilet. The invention of that homely, but useful, device was attributed to one Thomas Crapper in a work of humorous fiction a number of years ago, entitled *Flushed with Pride*. If Thomas hadn't been fictional, I'm sure he would have been thrilled to find himself promoted to the nobility, albeit with a name change.

In fact, the term is much older than our modern plumbing apparatus. In Shakespeare's day the privy was often called the 'Jacques' or 'Jakes', deriving from the French equivalent of our name

'Jack', and providing the humor underlying the dour character of Jacques in *As You Like It*.

According to William and Mary Morris, in the *Morris Dictionary of Word and Phrase Origins*, the first printed appearance of 'john' meaning 'privy' was in 1735, in the regulations of Harvard University, where freshmen were prohibited from using the 'Cousin John' reserved for more senior students.

D. A. Neiburg  
Laurel, MD

I am sure your "Old Timer" is sincere in trying to describe the beauty and solitude of beekeeping in the woods of British Columbia...but Hemingway he ain't.

Charles Leshner  
Northumberland, PA

This first letter from a most recent subscriber, unfortunately of a negative vein.

I was shocked and dismayed at the gobbledegook in your June '89 issue, page 316 and ending on page 362, titled 'The Inner Cover'. We consider it a disgraceful mish-mash, shocking that it is

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contributed by The Editor.

John Ugles  
Bainbridge Island, WA

## Pollination Puzzle

In the recently published paper (March, 1989) "Pollination Parameters" (Robinson, et al. 1989), estimates are presented for what crops are benefited by pollination of honey bees and how many colonies are actually used for this purpose each year. We commend the authors for these updated figures. However, the extension of their work to establish a realistic value for honey bee pollination is faulty. There are at least two major errors which make the estimated values for honey bee pollination invalid. There is also one minor arithmetic mistake which causes the authors to overstate their results by some \$949.5 million. The last is in the figure for grapes in Table 2 (p. 150) where  $V \times D \times P$  is  $0.1 \times 0.1 \times 959.1 = 9.6$ , not the claimed 959.1.

The substantial error is in the evaluation of worth of honey bees (equal to the losses incurred without honey bees). The authors make the incorrect assumption that, with a reduction in the output of a crop, there will be no change in the price of that crop. In fact, there is quite likely to be an increase in the price. We have only to look at the effect of a freeze in Florida on the price of orange juice. Further, the authors presume that all of the increased output is a benefit, disregarding the fact that increased output by one grower is likely to be a substitute for some of the output of another grower.

The proper question to ask is how much does each participant in the market for the crop lose without honey bees. The farmer may lose profits, although agriculture is a competitive industry in which there are unlikely to be any long-term economic profits. The consumer may lose through higher prices. The latter is the more likely case and should be evaluated.

If a particular crop is reduced in output from the current resources devoted to producing it, it may be possible to keep the same output by devoting more resources to that crop. For example, consider the case of lemons which the authors expect to be reduced in output by 20% (Table 2) in the absence of honey bees. All it would take to keep the same output level would be to devote 25% more land, 25% more labor,

25% more capital equipment, and 25% more supplies. The result would be a 25% increase in cost.

The third error is in the estimation of losses for both a seed crop and again for the crop itself. This builds on the error made by Levin (1983) in his estimate of the value of bees on crops. Generally, honey bee pollination is needed to set fruit or seeds and is not needed for the crop. The major case of this in their paper is alfalfa for hay. The value of the seed loss has already been calculated. Honey bees are not needed to grow the hay from the seed, although they are needed for the seed. Once the seed has been planted, they hay will be grown whether or not there are any honey bees present.

The source of this error is in the same reasoning that caused the authors of this paper to calculate losses as though no replacement for the lost output was possible; they believed that if seed production was reduced, it would necessarily follow that the crop production would be reduced apace. However, that is not the case. If seed production is reduced, that will mean that it is necessary to devote more resources to the production of seed and that seed will be available only at a higher price. That can be accounted for in the lost value of seed. There is no additional lost value in the crop. This also follows for cotton.

Taking out the values which are accounted for by the first and third errors, we find \$949.5 million for grapes, \$2831.4 million for hay, and \$583.3 million for cotton. These total \$4364.2 million of their \$9743.2 million in losses. Reducing their figure by this amount gives a new loss value of \$5379 million per year. Of course, it must be stressed that, since they have used an incorrect method of calculating the social losses, even this figure is very likely to be incorrect.

There is an additional problem

with their data which we will consider here only briefly. That is in the figures used for the importance of honey bees to the individual crops. There are two points apparent in these data with which we take issue. First, they are admittedly inaccurate, as are any such figures presented by anyone. However, these contain a special measure of inaccuracy because the values are specified to be 0.8 if unknown, and 0.9 if unknown and honey bees are introduced. This fails to take into account the fact that honey bees may be introduced without regard to whether they pollinate anything. Fees may even be paid to the property owner (crop grower) if the honey yield is high enough. The value of the honey bees is composed of two parts; the pollination service and the honey yield.

The second part of this problem is that the authors presume that there are no insect (or other) substitutes of honey bees. By introducing honey bees, growers help to suppress other possibly beneficial species which could act as substitute pollinators. As the most egregious example of this flaw, consider the case of almonds (with their estimated value of \$360.6 million per year, Table 2). The authors implicitly claim that there would be no almonds without the services of honey bees. An important implication of this is that, in the absence of honey bees, almonds would become extinct since they could not produce.

One must take great care in estimating values/losses of economic commodities.

S. E. Southwick  
SUNY-Brockport  
and L. Southwick, Jr.  
SUNY-Buffalo

## The Authors Respond...

The two Southwicks are certainly correct that there was an arithmetical error in our article; in Table 1, the value attributable to honey bee pollination for grapes should have been \$9.6 million (not \$959.1 million), and therefore the total for value attributable to honey bees for all the agricultural crops listed should have been \$8.7 billion (not \$9.7 billion). This error was caught too late to change in print. On the other hand, various U. S. crops were not included in that table, because their production is not reported regularly by the U.S.D.A.; inclusion of the value of those crops would raise the total somewhat. Our final report to the U.S.D.A. included

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# SEPTEMBER Honey Report

September 1, 1989

## REPORT FEATURES

Summary: R=Range of all prices.

A=Average prices across all regions.

L=Last month's average.

Comments: Price Index is a ranking system comparing a region's prices to other regions.



	Reporting Regions								Summary		
	1	2	3	4	5	6	7	8	R	A	L
<b>Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.</b>											
<b>Containers Exchanged</b>											
60 lbs. (per can) White	40.50	39.76	38.00	33.20	25.31	35.25	38.63	39.00	25.31-42.00	37.27	38.53
60 lbs. (per can) Amber	40.00	31.93	35.00	31.20	22.50	32.50	36.00	34.10	22.50-40.00	32.90	35.52
55 gal. drum/lb. White	.66	.40	.40	.52	.40	.59	.57	.59	.30-.66	.52	.50
55 gal. drum/lb. Amber	.60	.37	.36	.50	.35	.52	.53	.51	.28-.60	.47	.44
<b>Case lots — Wholesale</b>											
1 lb. jar (case of 24)	29.50	28.28	26.75	24.84	23.50	23.75	25.75	30.27	20.40-34.40	26.47	27.14
2 lb. jar (case of 12)	28.50	26.84	25.00	23.68	22.20	24.50	28.25	28.68	21.00-37.20	26.29	25.97
5 lb. jar (case of 6)	32.00	31.28	23.13	26.08	22.00	26.25	26.15	26.10	22.00-46.50	27.50	26.70
<b>Retail Honey Prices</b>											
1/2 lb.	.90	.99	.89	.97	.83	.89	.95	.95	.83-1.19	.94	.92
12 oz. Squeeze Bottle	1.60	1.61	1.39	1.36	1.13	1.08	1.15	1.38	.99-1.89	1.38	1.33
1 lb.	1.60	1.59	1.51	1.65	1.33	1.50	1.65	1.61	1.29-1.98	1.57	1.54
2 lb.	2.85	3.37	2.20	3.13	2.44	2.53	2.90	3.08	2.20-6.00	3.04	2.72
2-1/2 lb.	4.00	3.82	1.69	3.19	3.45	3.20	3.71	2.27	1.69-4.79	3.35	3.32
3 lb.	4.00	4.58	3.69	3.09	3.69	3.70	3.72	3.67	3.09-5.70	3.94	3.77
4 lb.	5.00	4.85	3.79	--	4.79	4.25	4.67	--	3.79-5.00	4.61	4.63
5 lb.	6.00	5.43	5.15	6.17	5.89	5.45	6.27	5.49	5.00-7.00	5.79	5.87
1 lb. Creamed	2.00	1.20	1.10	1.59	--	1.65	1.74	1.75	1.10-2.00	1.61	1.66
1 lb. Comb	2.25	1.81	1.25	2.37	2.89	1.97	2.77	3.40	1.25-4.50	2.28	2.34
Round Plastic Comb	1.75	2.70	1.50	1.85	--	1.75	1.85	1.89	1.50-3.00	2.00	1.91
Beeswax (Light)	1.10	1.08	.90	1.05	1.10	.92	.95	1.50	.90-2.00	1.10	.99
Beeswax (Dark)	.95	.98	.80	.95	.91	.80	.85	.90	.80-1.10	.91	.89
Pollination (Avg/Col)	30.00	--	20.00	28.33	19.00	20.00	27.00	24.00	20.00-32.50	24.90	25.00

### Region 5

Price Index .70. Prices steady to a bit lower, mostly due to seasonal fluctuations. Demand steady to increasing a bit. Production sporadic throughout, either too wet, too dry or too cold. Dakotas particularly hard hit with drought.

### Region 6

Price Index .84. Prices and demand rock steady. Weather has been warm and wet but production seems average or better in most areas.

## MARKET SHARE

With all the good news that's coming from the Honey Board, here's a taste of what we're up against. The following are just the **Advertising** budgets for these products for the next 12 months: Nutrasweet - \$20 million; Equal - \$14 million; Aletame - \$30 million; Sucralose - \$30 million; Sweet 'N Low - \$4 million; plus commodity giants Kraft General Foods and Proctor & Gamble are both trying to get in the artificial sweetener's market. Honey has some stiff, and rich, competition. □

### Region 1

Price Index 1.00. Prices steady to a bit lower due to fairly good production. Demand steady to higher because of tourist trade. Weather decent, but need warm, dry fall to make good winter crop.

### Region 2

Price Index .94. Prices steady to increasing, as demand for specialty crops begins to increase. Stocks are very low due to cool, wet spring in most areas. Some spots hit it right and large harvests are expected.

### Region 3

Price Index .85. Prices down a bit and not looking to rise much. Demand slow, weather wet early, delaying or stopping some flows. Many areas still having too much rain.

### Region 4

Price Index .82. Prices increasing a bit in most areas, primarily urban stores and tourist trade. Demand steadily increasing but still weak compared to some. Crop production down in many states, but strong late flows anticipated.

### Region 7

Price Index .92. Prices steady to increasing a bit as the first of new crop comes in. Demand starting to pick up too so sales look good for fall. Weather adequate for good crop production.

### Region 8

Price Index .91. Prices going up along with demand. Sales exceptional in northern areas, holding steady in the rest. Production in north sporadic, some good and some poor. Southern areas dry, dry, dry. Cotton seems good, if it holds.

Interested in becoming a "Honey Reporter"? Contact the Editor today!

# The Big Picture

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## Honey Production, the CCC and The Honey Board

When it comes to the big picture of honey production, sales, marketing and general statistics, the individual tends to get lost. There are very few beekeepers whose input can change the national picture. But we all play a role in shaping that big picture, whether we harvest 100 pounds and give it away or a million pounds and put it under loan.

The USDA, NASS, ASCS, Food & Nutrition Service and others actually keep pretty close tabs on how much honey is produced on a per colony basis, where it goes, how much it costs and who eventually uses it.

Our staff has spent the last few months gathering all of this information, combining it in ways even the government agencies haven't thought of, and have come up with some interesting pictures of honey production, pricing, use and — you. And, we thought, what better time to publish it than during national honey month.

For starters, we thought we'd look at the basic economics of supply and demand. Essentially it goes like this. If the *supply* of a commodity is *steady* and *demand* for it *increases*, the **price** for that commodity will **increase**. Along the same lines, if the *supply* *decreases*, but the *demand* *remains steady*, the **price will increase**.

Conversely, if *supply* is *steady* but the *demand* *decreases*, the **price will go down**. Or, if the *supply* *increases*, and the *demand* *remains steady*, the **price will decrease**.

These axioms may seem fairly elementary, but most of us tend to lose sight of them when considering the price of honey.

The set of eight graphs on the next page depict the relationship between how much honey was produced per colony and the corresponding price of the honey produced. We have set these up in the regions of our Monthly Honey Report, so you would have a familiar base to work with.

These graphs do not indicate how much honey was produced in each state, but rather how much was produced in each colony, making it far easier to see how actual production

of lots of honey is forfeited to the government, (see Government Graph, 1986), then that amount of honey (or nearly so) will be put in consumers hands free of charge. Some honey never leaves warehouses because of poor quality or other reasons.

Free honey drives down demand, increases supply and generally tends to lower the price.

In 1987, more honey was produced, and even though less was forfeited the price dropped again — increased demand brought it up (fewer people receiving free honey) but a greatly increased supply brought it down even further. Think what would have happened if there had been a terrible crop failure.

However, the buy-back program throws a wrench in the works, because it more or less sets the standard at which honey is bought and sold in large quantities. In effect, the government has changed the age-old theory of supply and demand. You

may put only a 60 under loan, and then buy it back and sell it to a packer, but they are taking all those millions of pounds and reselling them to distributors or others. For these folks supply and demand still works, but for us it has pretty much gone out the window. The net effect is that unless there is a critical shortage (as with amber honey last winter) the government is setting the price of honey — yours and mine.

This may not be the case if you sell direct from your house though, but these sales, and the amounts sold are

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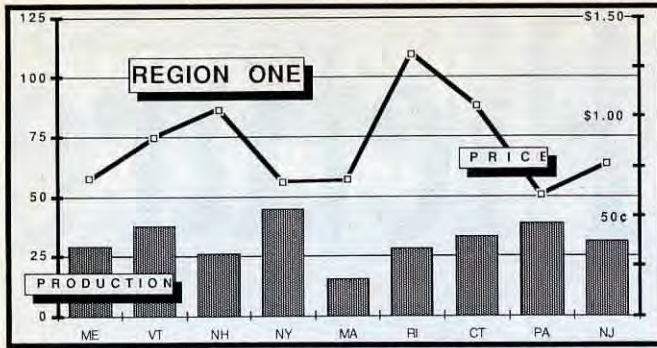
*“The Government Program has bent the laws of supply and demand, but they're not broken.”*

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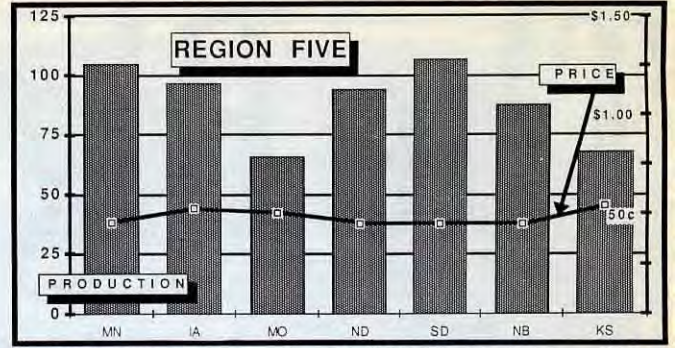
affects price. Figures are the averages for 1986, 1987 and 1988 combined.

We cannot overlook the role the government program plays in our lives. On the surface it would seem to be very small, but in reality it tends to shape much of what we can do.

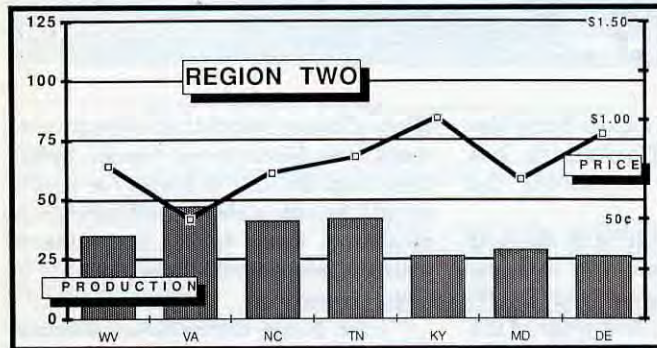
For instance, the amount of honey that goes into the government program and stays there relative to the amount that is repurchased in the buy-back program and comes out has a drastic affect on what we can sell our honey for.



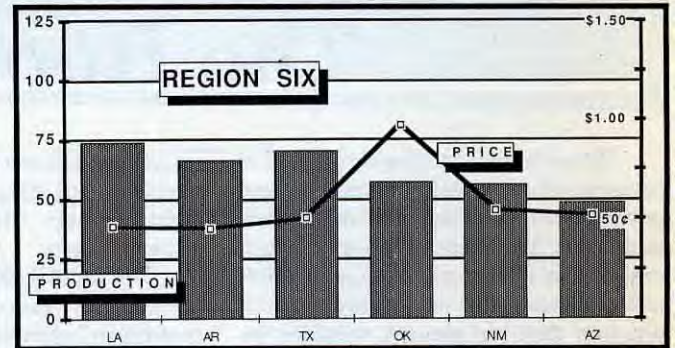
**Region 1.** Using government figures, this region most closely parallels the Honey Report's data. Colony production is generally low, 30 - 40 pounds, while prices are the highest overall. This for two reasons — first, more people live in this area than any other, thus creating high demand with low supply, but imports have rushed in to help fill this supply, so demand is the key figure here.



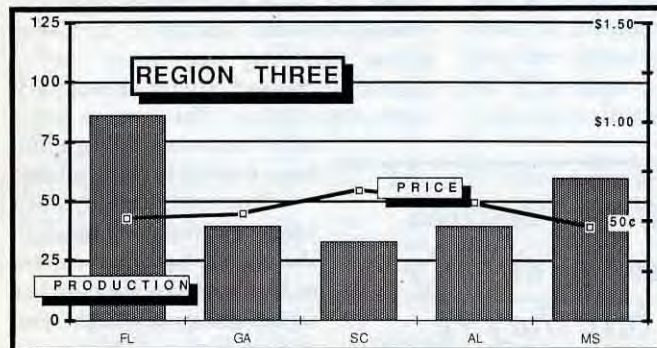
**Region 5.** Definitely the northern half of the nation's honey producing area. Per colony production is staggering for most of us. But low population, plus increased transportation costs to get this much honey to markets tend to keep prices, on average, right at gov't levels. Supply and demand do not exist here.



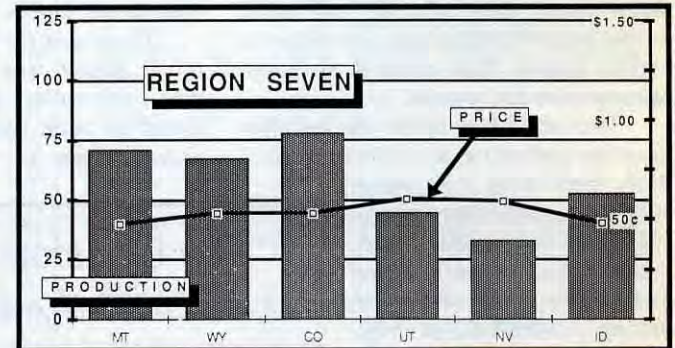
**Region 2.** Production similar to region 1, but two things are different. First, there are fewer people, lowering demand, but more importantly many speciality honeys are produced in this area, increasing demand. Confused? The two tend to balance each other.



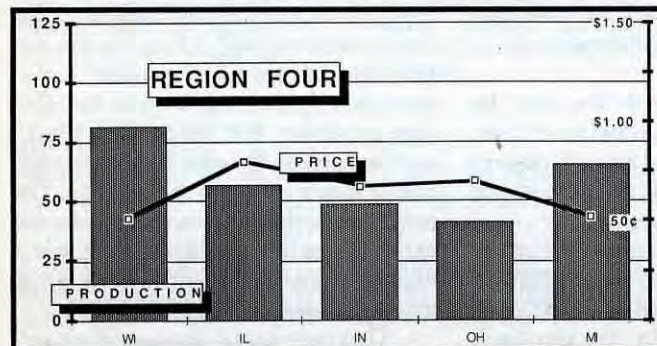
**Region 6.** Very similar to region 5. Production a bit lower, but populations tend to be low too. OK seems to have a secret they're not sharing, because we could find no reason for the high prices paid there.



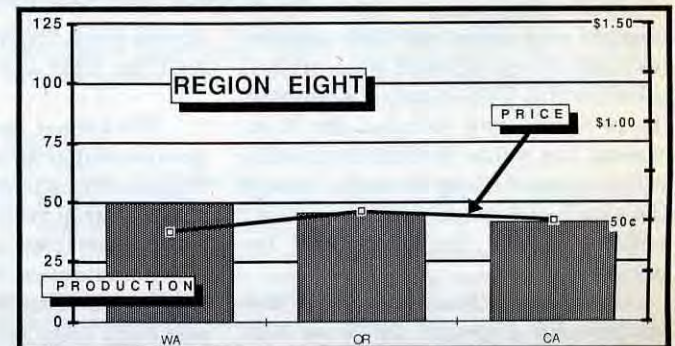
**Region 3.** High production and generally low population tend to force prices down to the buy-back area (what the gov't pays the beekeeper in addition to the world parity price).



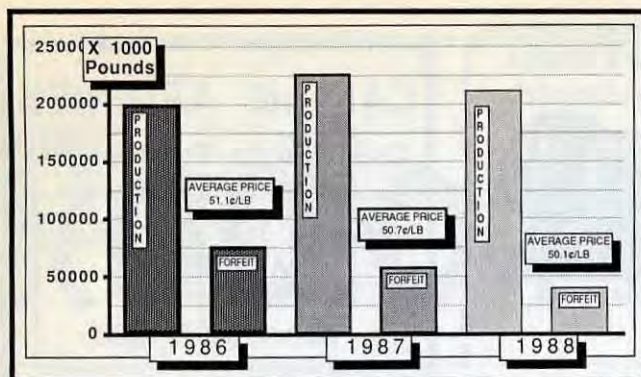
**Region 7.** This region, and region 8, do not follow the patterns found by either our Honey Reporters or the Honey Board's price survey. Though production figures are in line, the reported prices seem to be low. We have no explanation.



**Region 4.** Production/colony is higher here, but several major metropolitan areas help increase demand, raising prices just over buy-back.

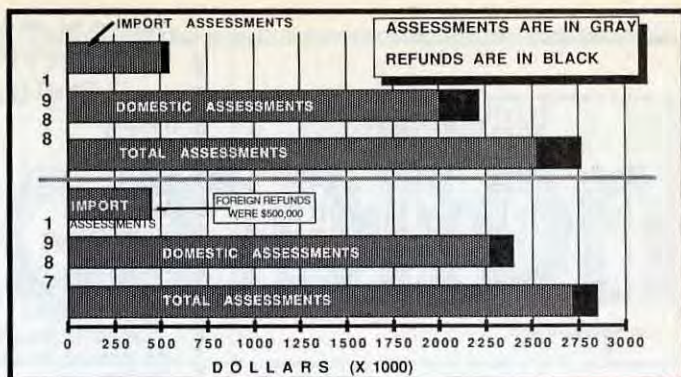


**Region 8.** Another paradox. Production records are below any reports we could find, (most range between 60 - 70 pounds). However, this graph may include pollinators, who normally produced less honey/colony. Prices too are low, because most reports put them nearer those of region 1.



**GOVERNMENT GRAPH**

Total honey production in the U.S., compared to the amount of honey forfeited to the CCC. Average price listed is USDA price.



**HONEY BOARD GRAPH**

Assessments and refunds of Honey Board moneys for 1987 and 1988. (Source-National Honey Board)

decreasing at an estimated 10%/year. It's easy to see that their effect on the big picture is declining (another factor here is the increasing liability problem for home sellers, but that's a completely different story.)

The loan program is up for reassessment in 1990. If it continues as planned it will decrease the selling price even further. This will continue, we predict, until again the laws of supply and demand take over. Imports will feed some supply, but the activities of the Honey Board will, or at least should increase demand. Prices should, over the next several years, become very unstable. Then, as supply once again

becomes predictable, prices will stabilize. Because of various other factors. (including the AHB) we won't try and predict the eventual price. The sugar market, the artificial sweetener market and the corn sweeteners market are all evolving, and will continue to do so. The final outcome for all of these is impossible to predict.

The Honey Board Graph does show some interesting figures. Shown are the proportions of assessments vs. refunds for the the two years they have been around. When you look at the Government Graph though, you'll see that more honey was produced in 1987 than 1988, resulting in more money

changing hands.

A curious fact is that though imports are reported to be down, their assessments were higher in '88 than '87.

Proportionally, refunds were a tad higher in '88 than '87, but the significance is lost on us. Of course we aren't the ones having to cut budgets, but as the price of honey goes down we all must spend more efficiently.

The buying public will pay for honey what honey is worth. Increase its perceived value, and the real price will go up. For each of us, 100 or one million pound producers — that is the key — increase the value to the consumer. □

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# Radio Promotion

R. T. EDWARDS

*"With the right approach and the right material, you can get some excellent promotion."*

If you are a beekeeper in a small town, you know you don't have a lot of money to advertise with. Which is okay, because most of the honey you have isn't going to spoil for a long time anyway. But your business represents, and is part of, a basic lifestyle known as "the health food life".

This time I want to talk about the benefits of radio promotions and some of the health food connections you have. Now, before you think I'm off my rocker thinking this kind of promotional idea is going to cost you a bundle, relax. If all goes well, you're going to discover a new way to advertise without paying one cent for the on-air advertising.

The type of radio promotion that I am talking about deals with offering your honey as a freebee to the radio station's listening public. It is called *promotional giveaways*, and it is designed to do just that. You offer X amount of free honey and the radio station gives it away to listeners as a prize for calling in, or as a reward for answering some sort of quiz.

That takes care of the easy stuff. Now look at some of the motivating factors behind why you ought to get excited and how you can get your local radio's promotion director equally excited.

From your perspective, giving away honey seems like a pretty dumb thing to do, right? Right! Only you aren't giving away the honey. You are actually offering the honey to potential customers. You are also acquiring air time on the radio through bartering. What else would you call giving away a product for another business' service? Bartering it is.

Still, why would you want to do

this? Well, aside from the future customer potential this kind of promotional activity will generate, you can also teach radio listeners about the value and importance of your honey and your honey products in their life and lifestyle. I'm not normally a betting man, but I am willing to bet that you are wondering how a giveaway (with no chance to talk about your products) is going to educate and inform the public about the value and importance of honey.

It isn't. But the timing of the giveaway is! The concept works on the premise that if you can associate your products with a date — like National Honey Month — the free association of the general public with your products highlighted is going to get them thinking about the usefulness and value of honey.

Also Easter, Halloween, Valentine's Day and Christmas are all useful in acquiring free association with your honey. By the way, most holidays are a good time to get with your local food or lifestyle editor to discuss the various treats which can be made from honey.

In any event, you have an idea as to

when to plant your fertile seed of association. And your motivation: sell more honey without paying for advertising. With that in mind, turn your attention to the promotions director at your local radio station.

The first thing you want to do is get rid of your motivations for selling him or her on the usefulness of honey. Rather, you need to focus on the amount of honey and honey products you are willing to offer. Be formal with your first encounter. Offer some suggestions as to why honey would be of value to his or her listening public. Too, you may want to try, based on your feelings of the director's temperament, some cliched associations: 'honey of a deal', 'sweeten up your sour puss', or 'sweet road to success'.

Hopefully, through his or her own associations with the meanings of these cliches, the director will see what you are driving at and give you the go ahead. If this doesn't work, try suggesting the novelty of offering honey as a sweet deal for tuning in to the station.

Whatever the outcome, you will be no worse for trying and you may get a whole lot of business. □

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# Raising or Rearing?

STEVE TABER of Honey Bee Genetics

P. O. Box 1672 • Vacaville, CA 95688

*"Some of us are Queen Rearers, but others are Queen Breeders."*

**W**hat's the difference? Are people who rear thousands of queens also breeders? Well, I'm sure most think they are but I make a distinction. Unless a queen rearer is making an effort to change to a more desirable bee, then he is just raising queens. Even if he raises the best queens in the business it does not mean he is a breeder. It doesn't have to be a major change a breeder strives for, but it ought to be something.

Let's examine a few of the many items breeders should be striving to improve to make SUPER BEES — bees that are better than whatever else is available from most sources. The two biggest items beekeepers (customers) are interested in are honey production and pollination. Lets talk about honey production first.

There are thousands of factors involved in honey production which can be selected and bred for. Here are some examples.

- Increase the number of eggs a queen lays. This was the approach used by the late Dr. G. H. "Bud" Cale. He produced a hybrid queen who laid more eggs than the run-of-the-mill queen. More eggs laid equal more bees in the hive. An important aspect of selecting egg laying rate is that it is possible to measure it by counting the number laid per day. This is usually done by counting the number of square inches of sealed brood, since counting actual eggs is very difficult.
- Longevity, which is also easy to test for. When I was employed at the Baton Rouge bee lab I received a number of day old worker bees from several of Dr. W. C. Roberts' inbred lines. We marked these with paint,

using different colors to designate different lines. Then, all were added to the same colony. I would spend 3 or 4 minutes several times each day watching this hive, monitoring the flight of the marked bees. One color, or line began foraging on the 8th day, most of the others started on the 10th day and one didn't start until the 12th. The same type of monitoring would reveal longevity of different lines of bees. If bees live longer you have more bees in the hive, and will produce more honey.

- Some bees will work at colder temperatures than other bees. In regions of the world where honeyflows are interrupted by cold rainy weather, bees should be selected for their ability to operate in colder

weather. In the breeding work I have been doing here in California I have noticed that some of my lines are flying and foraging heavily on cloudy days when the temperature is down to 60°F. Often, when almonds are in bloom this is the kind of weather bees have to contend with. Conversely, in those areas that are hot and dry, like parts of southern California and Arizona where the temperature exceeds 110 or sometimes even to 120 in our Imperial Valley, it might pay to find bees who are efficient workers at high temperatures.

- There have been reports about differences in honey storage and comb utilization by bees, called "hoarding". This also may be genetic, but I have not seen evidence that this is so.

To test for honey production is virtually an impossible task because the cost could only be borne by some public agency. A proper test of one stock would be to compare it with others in the same apiary, and you would have to have numerous apiaries. Further, these tests would have to be performed in several different geographic areas, because honey production in South Dakota is different than in Florida. Also, colonies in each apiary would have to be isolated so that bees would not drift from one hive to any other. The test would also have to be consistent among the many different experimentors, so that every person would perform the same management task the same way. You can see this would require thousands of colonies and 20 or more highly skilled beekeepers.

Pollination breeding: To me, this

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appears much easier. Much of the work has already been done by Dr. O. Mackensen and Bill Nye, then by Dr. Bud Cale. They bred bees that preferred to work alfalfa. This test was measured by counting the quantity of alfalfa pollen compared with all other types in the pollen traps attached to the test colonies. In only a few generations they were very successful.

Another approach is the one conducted a few years ago at Ohio State University, where bees were selected that collected more pollen of all kinds. My partner, Tom Parisian and I have noticed this same tendency in some of our hives. There are always some hives that have lots of pollen and it would be easy to select for this trait and incorporate it within one year into a breeding program.

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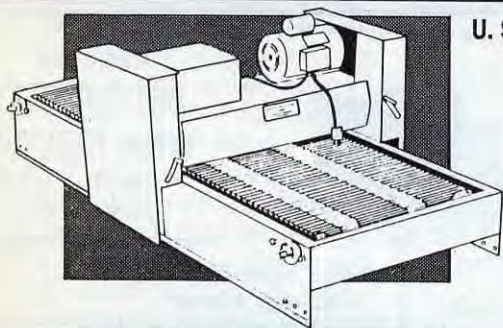
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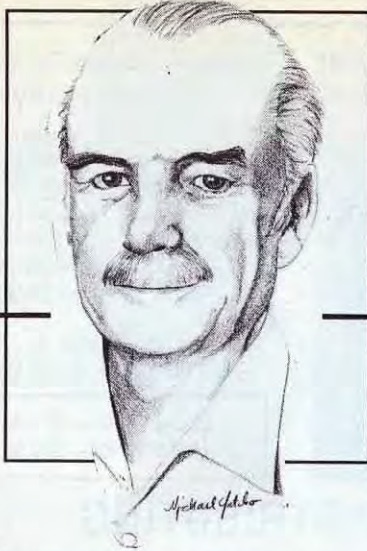
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# THE BEE SPECIALIST

ELBERT R. JAYCOX

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*"Think winter — while it's warm enough to prepare for it."*

**W**hen September arrives, the bee magazines always give you the word on getting your bees ready for winter. Repetitious though it may be, you'd be surprised at the number of beekeepers with considerable experience who fail to do the requisite preparations for good wintering and lose bees as a result. Beekeepers just getting started also must assess their bees' needs in September and be prepared to satisfy them as well as possible so they will be there in quantity when spring rolls around.

Our concern about wintering relates to the environment of the colony, and the immediate, or internal, environment of the colony is a big part of that concern. The other is the external environment and its effect on the colony. Internally, we are concerned about the colony's stores, their quality, quantity, and location within the hive. The quality and age of the queen, the number and ages of the worker bees, and the presence of diseases and pests are addi-

tional elements of the internal environment.

The important parts of the external environment of the colony include wind protection, air and water drainage, vandalism, and exposure to the sun. These are often not as difficult to remedy as some of the colony's internal environment, but we tend to emphasize the latter and neglect to improve the physical factors outside the colony.

Let's leave this general discussion of wintering for a moment to consider what the bees are up to in the fall. By this time, we have taken most of the surplus honey from the bees and are hoping they will fill their combs heavily with whatever they can find among fall blooming plants. They may do this, with luck, or they may spend their time during warm fall days collecting the

juice from fallen fruits or aphid secretions (honeydew) wherever they can find them. If not available, the bees may simply concentrate on stealing the stored honey from other colonies.

Of these sources, probably the best for winter is the pilfered honey if it is not from colonies weakened by American foulbrood disease. The other foods, fruit juice, honeydew, and even some floral sources, are not good foods for bees to

live on over the winter. And they may have to live on them if you took too much honey for extracting. The honey you took was probably the lighter honey and the best for wintering. In large areas of the U.S., the late summer and fall honeys are darker and less desirable as winter food because they contain more indigestible materials and often granulate readily. Yet many beekeepers stoutly maintain that bees winter best on honey and that it is a bad

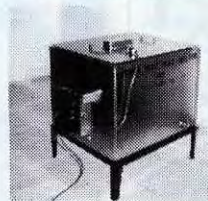


*Shaded colonies (right) in winter apiary. Their mortality was much greater than among those reached by the sun.*

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practice to feed sugar syrup (pure sucrose) for winter stores.

Some of our best honeys are from the leguminous plants including sweet clover, alfalfa, alsike clover, and red clover. The bees collect the nectar from these flowers and convert it into a desirable honey. And what was it they collected? As much as 88% (red clover) was pure sucrose according to a study by Furgala, Gochbauer, and Holdaway. Of the rest, an average of 37.5% was glucose and fructose, direct derivatives of sucrose. So why should we expect our bees to eat just any old mixture of honey, honeydew, and fruit juices over winter when we can give them a pure solution the same as that from which they produce honey (in combination with many additives)? Many beekeepers have reported that they suffer fewer losses of colonies from bees fed heavily with sugar syrup before winter than with colonies wintered on honey. Losses of bees in Switzerland from toxic honeydew have been greatly reduced when the bees were fed sugar syrup in the fall. I have found also that caged bees fed sucrose solutions live longer than those given diluted honey.

I believe the evidence is clear. You can increase the survival of wintering bees by timely feeding of sugar syrup in the fall. Even a "topping off" of their stores will help, because it will reduce any ill effects from less desirable foods already in the combs. And you need not worry about giving them too much unless you give it too late so that they are unable to make proper stores from it before the cooler weather prevents such activity.

To get back to the topic of the environment of the colony, think about the "quality" of the location in which you will leave your bees for the winter. It may be a fine summer location where the bees can make a good crop of honey. But the breeze that helped cool them and made it easier to evaporate excess moisture in summer may be a blizzard in winter which will chill and damage colonies. Bees suffer from wind chill too, so select apiary locations protected from the prevailing wind by vegetation, buildings, or natural land features. Air and water drainage can also be threats to colonies. Avoid any location where cold air and/or water can settle around the hives. Often, a location slightly upslope is warmer and drier.

Winter shade from buildings and evergreen plants is detrimental to colonies of bees. Place the bees so that they



*Nice frame of brood and bees from a fall queen in Illinois the first week of March.*

receive wind protection from such objects, but are in full sun most of each day. As a protective tree or hedge gains height near the bees, you may have to relocate the hives to make sure they are not shaded in winter.

To avoid thefts and vandalism, locate the bees away from roads but within sight of an occupied home, if possible. It is not unusual for people to steal honey from colonies during winter. In one case, they stole all the frames of honey a friend had just put into his wintering colonies to keep them alive until natural sources were available. Many colonies died as a result.

Even in southern New Mexico, our bees do better with greatly reduced hive entrances over winter. I use a simple lath cleat nailed to the bottom brood chamber to make an entrance not more than one inch wide and 3/8 inch high. This conserves heat and reduces the chance of robbing getting started. I have had bad luck in using screening of any kind because it always seems to

become clogged with dead bees.

By September in most areas of the country it is getting late to requeen. Better to unite any colonies you find that have an old or faulty queen. But for next year, especially if you are in an area of early nectar flows or pollination service, requeen at least part of your colonies in August-September and compare their performance with the rest the next spring. Ian Berry of New Zealand says the results will surprise you. The big value is the number of young bees going into winter and produced during "confinement". Colonies given new queens in August produced about twice as much brood during the period of November to March as did those with queens more than one year old. Al Avitabile found these important differences in his work in Connecticut.

There is presently much concern about losses of colonies last winter from infestations of tracheal mites. Because of those losses and the selection pressure they exerted, some beekeepers could be off to a good start in selecting bees with resistance to the mites. Given three or four years of this natural selection, we could see a reduction in susceptibility and losses to tracheal mites among our bees. In lieu of any action by the U. S. Department of Agriculture in breeding and importing resistant stock, which we badly need, someone else must begin the process. If we treat colonies each year with menthol we will be maintaining all our susceptible strains and be condemned to spending extra time and money which is not needed for bees resistant to tracheal mites. □

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# Hefting Myth?

AUSTIN KNOX



*This is the set-up used in the 175 guesses. The editor tries his hand at 'hefting' but didn't have his guess recorded. (It was in the 60% heavy range.)*

"I'll give \$20 to anyone who can guess the correct weight of the contents of this hive," says Austin Knox, waving a brand new Jackson in the air.

There's lots of takers to that challenge everywhere he goes and he's taken it to several states and lots of meetings. So far, he's not had to pay once — in over 175 tries.

If you get the feeling he knows something the rest of us don't, you're right. But we convinced him to share his secret (if not the weight of his hive's contents) recently, and he explained the myth of hive hefting.

He starts his experiment by setting up a hive, complete with bottom board, two brood chambers (deeps), an inner cover and a telescoping outer cover. Inside is all the appropriate equipment, plus a 47 pound weight, which he says would be reasonable to find in a hive in early spring.

The history of this research goes back to when he first started keeping bees and his reference books indicated

that he should determine the weight of a hive by 'hefting' it. A 'heavy' colony wouldn't need feeding, while a 'light' colony would. With a little digging he found out that he needed at least 45 pounds of honey inside in early spring to avoid having his bees starve. If he had less he needed to feed — or lose his colony.

After a couple years of guessing exactly what 'heavy' or 'light' was, he began to wonder if he was the only beekeeper in the world who had to guess — and thus began his research.

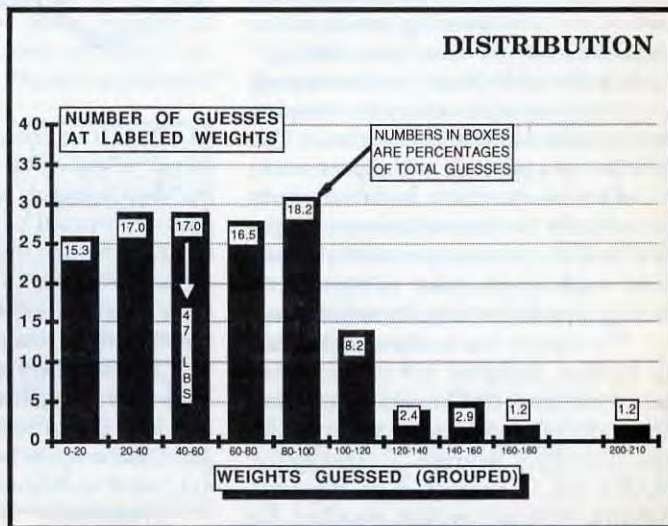
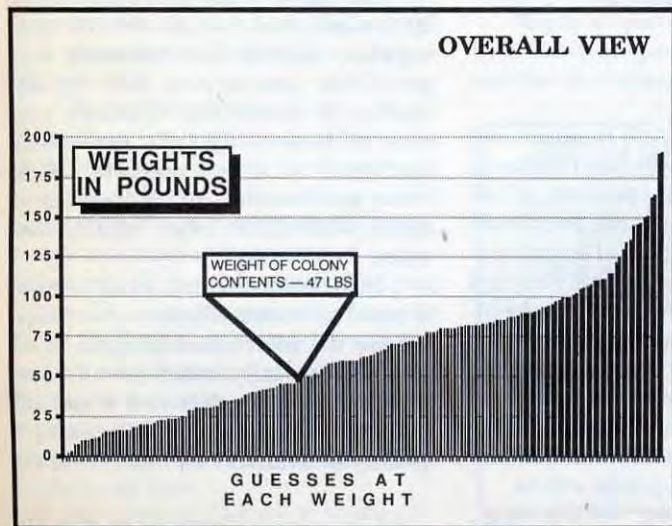
Fortunately for us he recorded all the guesses people made and I convinced him to give me a peek. What I saw, and now show you, was amazing.

The graph labeled "Overall View" shows how many guesses, at any given weight, were made. It also shows where the actual weight (47 lbs.) lies. Obviously, most people tend to think their hives have more inside than actually exists. The down side of this is that people can't figure out why their bees

died when they obviously had lots and lots of food.

The second graph labeled "Distribution" shows how the guesses, when grouped together were distributed. The exact numbers show that 40% of the guesses were at 46 lbs., or less — these folks might be persuaded to feed. But 60% of the guesses were heavy. Although experience plays a role here, many of these colonies probably wouldn't get fed, or fed in time to continue the rapid build-up needed in spring.

Is "Hefting" a myth? You be the judge! □



# Beekeeping Development ...A Profile of IAAD

HENRY C. MULZAC

Have you ever noticed the abbreviations which are associated with beekeeping? Some are practically synonymous with our craft, while others don't quite ring a bell. Take for instance, GBC, ABJ, ABBA, NHPD, HBTM, HFCS, NHB, AAPA, ABF, HMF, AIA, IBRA, AHP, EAS, EFB, WAS, CPBP, KTBH, I I, TM, IFAA, AHB, FABIS, AFB, ICPBR, EHB, SBV, SSBF, IAAD...I who, or is it I what? Actually it is both, which brings me to the why of this article. IAAD stands for the International Agency for Apiculture Development.

IAAD was founded in 1977 by the Reverend Rodney Dillinger of Rockford, IL, with the support and encouragement of the late Dr. Gordon F. Townsend of the University of Guelph, Canada. Since then IAAD has quietly gone about its business of providing beekeeping assistance to literally thousands of people. A comparatively small, non-profit organization which is international in scope, IAAD advances no political or religious philosophy.

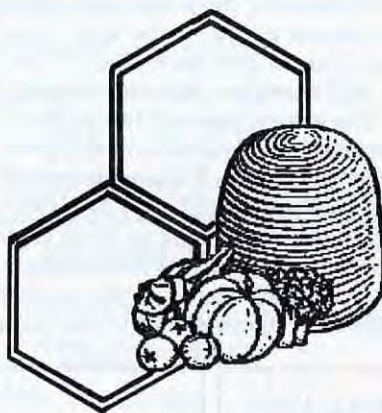
The agency's intentions are basically charitable and humanitarian, and are aimed primarily at those industries and endeavors that enhance beekeeping development. Furthermore, IAAD is the only private voluntary organization (PVO) in North America dedicated *exclusively* to beekeeping development. IAAD also serves as a "pass-through" agency for individuals in developing countries seeking to attend beekeeping seminars or conferences overseas. The function of a pass-through agency is to act as an intermediary, to substantiate requests for funding and provide logistical and documentary material when rural beekeepers take advantage of local grants from other organizations.

The agency has performed feasibility studies, designed aid projects, has held workshops and has made information referrals to qualified personnel and literature sources. Occasionally, IAAD's aid is expressed as financial support. A recent project entailed the

acquisition and shipment of hand-operated sewing machines to a women's group in Zimbabwe, Africa. These machines are now being used to manufacture bee suits and veils for resale by the group.

The eight individuals who comprise IAAD's Board of Directors are the Agency's main work force. They are the Agency's eyes and ears in both the beekeeping and PVO communities. By keeping an 'ear to the ground' and a 'smoker lit', IAAD's directors monitor the many programs, projects and financial aid being offered by other PVO's which may have an application to an existing beekeeping project.

The agency's Advisory Council also plays an important role in IAAD affairs. These advisors, at their university, state or government posts, provide



IAAD with an insight to research and trends effecting all aspects of beekeeping development. All members of the advisory council have made prominent contributions to the field of apiculture. Most of the board and advisory council have practical experience as beekeepers in Asia, Africa and the America's.

The members or "Friends of IAAD" have an ongoing interest in beekeeping, and how the private, non-profit sector has effectively helped in international aid, relief and development efforts.

Frequently when PVO's (e.g.:

Medical Assistance Programs Int'l; Trickle-Up Program; CODEL; The Near East Foundation) or Non-government Agencies (NGO's) such as CARE, undertake development projects overseas, some part of the project invariably relates to beekeeping. When given adequate consideration, beekeeping is a popular development project. Many nations have recognized that beekeeping has a vital role in their country's agricultural development.

Beekeeping in developing countries generally involves a low cost investment, reciprocates other trades, and uses small scale processes and equipment. Thus, beekeeping receives close scrutiny as an addition to conventional agricultural pursuits.

The ecological affect of beekeeping is equally impressive. When a beekeeping development program starts, existing local resources come into play that would otherwise go unused. These natural resources are the nectar and pollen produced by plants. And beekeeping programs demand only a few requirements. They can be started by individuals and rural cooperatives with a minimal dependence on technology or other outside assistance. Furthermore, beekeeping is an agricultural enterprise universal to nearly all cultures and ethnic groups.

Obviously, honey and beeswax are by-products and the incentive for raising honey bees. Both are valuable, non-perishable commodities that are domestically marketable. Further, success in beekeeping isn't necessarily contingent on export markets. Often, honey and beeswax can be produced in areas with little other agricultural value.

IAAD has found that when it comes to rural extension education, beekeepers are the most disadvantaged of all farmers. Typically, beekeepers are isolated and they practice such a specialized skill that appropriate literature is usually unavailable at local libraries.

*Continued on Page 514*



# RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

*"How, exactly, do tracheal mites work?"*

**T**here does not appear to be any question that tracheal mites are responsible for widespread losses of honey bee colonies across the U.S. this past winter and spring. However, it is not clear how the mites affect bees and how these losses are caused. Also, while many papers have been written about tracheal mites in Europe, the results appear to have little application here since European honey bees are apparently resistant to, or tolerant of, the mites. Several researchers in the U. S. are now investigating tracheal mites. Below, I review one of the recent papers that gives us more information but still indicates how little we know.

The foraging activities of honey bees were followed to determine the effects of a mite infestation. This was done in southern Florida during March and April at a time when brood rearing was taking place. The colonies used were of normal strength for the time of year. The test colonies had between 48 and 68% of their bees infested, based on samples of 50 bees that were collected by a vacuum cleaner from each colony and examined individually under a microscope.

The results of the Florida study were that no statistical differences could be found "between infested and noninfested bees for the number of foraging trips, frequency of foraging trips, round trip times, frequency of pollen collection, or time between foraging trips". The average amount of nectar found in the honey stomachs was the same for both groups of bees. During the five to six weeks that this study was conducted, there was no difference in survivorship between infested and noninfested bees.



In the discussion of their results the authors conclude that a tracheal mite infestation is not of economic consequence at a time when colonies are rearing brood. In this study the question of how mites affect bees at other times of the year was not researched.

Gary, N. E. and R. E. Page, Jr. *Tracheal mite (Acari: Tarsonemidae) infestation effects on foraging and survivorship of honey bees (Hymenoptera: Apidae)*. *Journal of Economic Entomology* 82: 734-739. 1989.

## More on Organization

Since a queen honey bee mates with many drones there are many subfamilies in a colony. These are groups of

bees that have the same mother but different fathers. The authors cited have shown previously that among middle aged bees, different subfamilies concentrate on different tasks.

What they have discovered now is that there are also significant differences among subfamilies in the tasks performed by older bees. Honey bees that seek pollen, seek nectar or are nest-site scouts are more likely than not to be in the same subfamily; that is, pollen collectors are more closely related to other pollen collectors, etc.

To undertake these studies, virgin queens were inseminated with sperm from three unrelated drones. "Each drone carried a different allozyme." Offspring from each drone could be identified through a process called "polyacrylamide gel electrophoresis". Allozymes have been shown to be reliable biochemical markers in animals, indicating genetic relatedness. The use of gel electrophoresis for this kind of study is a recently developed process without which studies such as these could not be undertaken.

We conclude from this research that genetics plays a role in what bees in a colony do. Bees in the same subfamily are more likely to specialize in the same task both when they are middle aged and when they are older. This is not to say that all bees in a subfamily perform the same job at the same time, but that they are more similar in this respect than they are to bees in other subfamilies. □

Robinson, G. E. and R. E. Page, Jr. *Genetic determination of nectar foraging, pollen foraging and nest-site scouting in honey bee colonies*. *Behavioral Ecology and Sociobiology* 24: 317-323. 1989.

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**IAAD...from page 512**

Compounding the problem is the fact that private voluntary organizations, foreign governments and other well-intentioned aid agencies often undertake or support a beekeeping development project without a thorough understanding of the requirements, or possessing the necessary trained personnel. Success, failure and motivation usually hinge on these trained people. It is for this reason that IAAD publishes *Cornucopia*, the quarterly newsletter.

*Cornucopia* helps span the gap between funders and recipients, and links both the technical and human aspects of beekeeping under the umbrella of agricultural development, a needed and necessary connection. Further, the newsletter fills a void by disseminating world-wide information pertinent to beekeeping development. Technical articles are written for the layman, regional developments are discussed, and the availability of aid from other Private Voluntary Organizations is reported. Membership to IAAD is open to anyone interested in beekeeping development. A contribution of \$12.00 U.S. (which is tax-deductible in the U.S.) entitles one to IAAD's quarterly newsletter. Write to: Mark Coleman, IAAD, 6N 909 Roosevelt Ave., St. Charles, IL 60174.

Finally, if all those abbreviations got you bothered by being baffled, their meanings are provided.

- AAPA American Association of Professional Apirists
- ABBA American Bee Breeders Association
- ABF American Beekeeping Federation
- ABJ American Bee Journal
- AFB American Foulbrood
- AHB Africanized Honey Bee
- AHP American Honey Producers
- AIA Apiary Inspectors of America
- CPBP Closed Population Breeding Program
- EAS Eastern Apicultural Society
- EFB European Foulbrood
- EHB Europeanized Honey Bee
- FABIS Fast African Honey Bee Identification System
- GBC Gleanings in Bee Culture
- HBTM Honey Bee Tracheal Mite
- HFCS High Fructose Corn Syrup
- IAAD International Agency for Apiculture Development
- IBRA International Bee Research Association
- ICPBR International Commission for Plant Bee Relationships
- IFAA International Federation of Apiculture Associations a.k.a. (Apimondia)
- II Instrumental Insemination
- KTBH Kenya Top Bar Hive
- NHB National Honey Board
- NHPD National Honey Packers & Dealers
- SBV Sacbrood Virus
- SSBF Southern States Beekeeping Federation
- TM Terramycin
- WAS Western Apicultural Society

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# LAST FLOW

ANNE WESTBROOK DOMINICK

Vacation's over after Labor Day and time to get serious about stocking-up (final food harvestings) and bedding-down (cleaning up our own piece of the scenery — last mowing of yard, meadow, pasture and even flower beds). Bees don't give much of a hoot about how we stock-up but they'd sure be happier if we put off flattening all the blooming weeds till next spring. We can supply our bees their own 'stocking-up supply' by leaving nature's last-ditch nectar and pollen sources alone. We can also give them a good boost by bringing in a few easy wild plants if they aren't already there. Beautification happens at the same time.

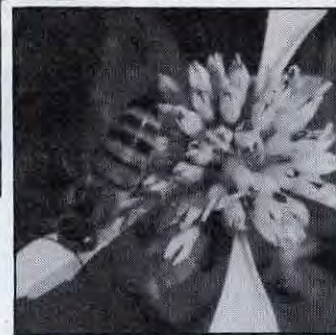
From September to freezing, some bee favorites are Spanish needles, goldenrods and asters. None of these should be shunned because others call them weeds. With a burgeoning interest in wild gardens and gardening for wildlife more and more seed companies supply more and more wildflower seeds. But more often we can collect seeds or take root divisions from the wild or, if we have friends so inclined, dig up some transplants as starters for our own lot. These are unendangered, hardy plants that once set in a compatible spot will naturalize and spread within a year or so into a veritable honey bed. Each plant has its own needs.

## Spanish Needles

(*Bidens aristosa*, and all other *Bidens* spp.)

Before I tell you the bad news let me ease the impact. These belong in the same family as sunflowers and are quite closely related to coreopsis and cosmos. Tell that to a gardener and it might sooth the horror. Those that know these flowers as Spanish needles already know the bad news: they're also known as bur-marigolds, tickseeds, beggarticks, beggar-lice, and stick-tights. Ripe *Bidens* seed heads resemble closely the orange cosmos species, except the seeds don't fall, they entangle in hair and attach to clothing like a leech to the ankle. Now most of

you know it (I did as beggarticks) and you probably figure no one in their right mind would encourage, let alone plant, a beggartick of any sort. But bees are the motive and both Eva Crane (*A Book of Honey*) and Harvey B. Lovell (*Honey Plants Manual*) rate it highly as a big surplus provider.



*Bidens* are September flowers we curse in October while picking off dozens of barbed seeds (*Bidens* means two toothed) one at a time. So introduce them in an untraveled area. Most have bright yellow daisy-type flowers (though *B. pilosa*, shepherd's needles, is white) and being prolific self-seeders a few seeds to get started will, in a couple years, spread over a large area nice to look at while it attracts a large foraging force.

Most *Bidens* are annuals, and all start in early spring from seeds ready for harvest by mid to late October the year before. When mature, they're

brown and splayed out ready for the snatch, but for pleasant seed collecting, harvest them when dark green by cutting the entire stalks and hang them to air dry (they'll continue ripening) until loosened. Then shake or beat seed heads into a paper bag. Don't worry about chaf mixed in. *Bidens'* seeds cannot be allowed to dry so plant (debris and all) as soon as ripe. They won't come up until spring since they need winter's freezing spell.

Some *Bidens* live in moist areas, some dry, so best to match up terrain as nearly as possible. Species living in moist areas on their own frequently (not always) adapt to dryer soil if it's richer. I've found they do well on what I call trashy soil (moist but well drained). I call it trash because "wasteland" means to me what's left after excavation of any sort and "trashy" means where people threw junk in the past. They prosper around old dumps or places where fill (other than gravel) is brought in. There's something rich and black in this soil but you wouldn't want to run barefoot through it.

One thing all stick-tights like is full sun exposure. And one thing none of them will do is stage a take over where grasses and perennials are already established. So a fairly free earth area is needed. If none is available, cover a patch with black plastic during August and September to kill what's there. Then, when tickseeds are ready, broadcast them, rake a bit half-heartedly to settle them into the soil, and that's it. Come spring a good percentage should germinate. Once started the beggartick's area should be mowed annually either late fall or early spring both to send the seeds to earth and to discourage competitors. Since beggarticks come up early they have a jump on other plants.

The honey produced, if solely *Bidens*, is table quality, light colored with a unique, pleasant flavor, according to Lovell. I couldn't say as here there are a number of other flowers worked at



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the same time. Though they grow to some extent all over the U. S. and Canada, they're most common throughout the eastern half. I don't know any seed companies offering any *Bidens* species. My original seeds were collected from along a roadside in up-state New York and were scattered around a former party-and-drink roadside pull-over on our land which was plenty trashy even after we picked up what we could. Other stand-by locations for a bed of beggarticks is along ditches, edges of barnyards or old home-sites, or along woodlots where the transition from grass to brush is taking place.

## Goldenrods

(*Solidago* all species)

While *Bidens* have about 25 species, *Solidago* have over 125 which start in early September and finish the end of October. They also are not fussy about where to grow. Goldenrods are well known for their honey — fairly dark, fairly strong — that some people don't like, but I do. Nothing is better to sooth a sore throat or as a quick warm-up as far as I'm concerned. Most common in the northeast one species or another will grow all over the United States and Canada.

All perennials, goldenrods are easily propagated by root division (digging up sections of the plant and planting elsewhere) as soon as frost is out of the ground in spring. If marked the year before while in flower, they can be lo-

cated in spring by their basal rosettes of green leaves that were developed the fall before. I've expanded my goldenrod season by marking in deserted meadows some blooming both earlier and later than what was growing wild around me and transplanting them the next year. Late, late fall would be okay to root divide although that is an active time for them to be establishing themselves for the next season.

Root division is the surest way to introduce goldenrods for although they self-seed nicely once established with seeds that blow in the wind, they're not so easily promoted by us. Their germination rate is quite poor, primarily because enough bees haven't gotten to them. However seed collecting and scattering is a nice way to spend a cold November day. When goldenrods are looking bedraggled, a leafless brown stalk topped by a drab, blowsy remainder of what had been bright a few weeks before, seeds are ready to be checked. If grey, they're mature (white aren't). If the seed is flat, it's worthless but if thickened, the embryo is there. Seed heads with a fair number of viable (life-bearing) seeds can be collected, taken to where you want them, and slapped or shaken releasing the seeds over the area. The next year a few should appear, after that they'll prosper. They're aggressive, hardy, and threatened by nothing but shade.

These wildflowers like full sun, well-drained to dry soil and will cover wastelands, abandoned meadows, pastures and hayfields, roadsides and ex-gravel pits. In fact, if given too rich a location they will go more to foliage and less to flower. In my area probably a dozen species (I can't differentiate all of them) are growing wherever the land is open and uncultivated. By the way, these aren't a hayfever culprit and, in Europe, they've been appreciated enough to be selectively propagated and hybridized.

Both Thompson & Morgan and Park Seed offer a two foot high cultivar of *S. canadensis* (one of the most common species) called 'Golden Baby'. If grown these would expand as all goldenrods do, by root and seed. Maver Nursery, a purveyor of rare seeds, offers sixteen native species. Maver's catalogue is a computer read-out of Latin names and cost only, but it has what I haven't found elsewhere. When seeds come from Maver they are in small packets with name only on it — no hints for sowing. If planting purchased



seeds it is best to order in fall for planting as they need winter to break dormancy at a good rate. If ordered for spring planting set the packet tin the freezer for a month. Also, if starting solidago seeds indoors (as bought seeds usually are) goldenrods are prone to damp-off. When the seedlings come up, transplant them in a second flat and set them higher than the main surface so the leaves will be above the damp soil. Once on their way to living no more mollycoddling is needed.

## Asters

(Asters all species)

Lovell, Crane, and Jaycox all list asters as significant for honey production. Over 600 species exist, they're all perennials, and they bloom from September into November. Many will grow hand-in-hand with goldenrods. Bees seem to prefer the goldenrods, although I've watched them work the small-flowered white aster (*A. vimineus*) at the same time they collected from the taller rough-stemmed goldenrods. At the same time not a bee went near some bonesets (*Eupatorium perfoliatum*) intergrowing in the same square yard.

Asters extend the autumn flow past goldenrods so can be credited as the last nectar source, at least, here in the northeast. Like goldenrods most asters want well-drained to dry, slightly acidic soil, and full sun, although they'll do quite well in partial or light shade. Meadows, roadsides, abandoned fields, fence-lines, and edge of woodlots are asters' natural habitats.

Asters, which tend to expand by extending their clumps rather than rambling underground roots, self-seed well once established. Their seeds can be collected in November but, like goldenrods, the percentage of viability is apt to be low. Their seedheads can be shaken over the area selected for them as soon as collected or stored in the refrigerator until mid-winter (for early, in-house starting) or spring. They need the cold spell for a higher germination rate so noticeable seedlings will be minimal in the fall if broadcast immediately.

Like many perennials, asters transplant readily by root division (digging up and splitting) in spring. When propagated this way they should be kept watered the first couple weeks to give their roots time to take hold. Asters, particularly New England and other similar asters, may crowd out their own selves over a few years be-



cause they hold their roots in so tightly. Expanding by root division in spring any clumps that were particularly vigorous the fall before will healthily multiply the number of asters.

In this area asters start mid to late August with a rather motly white wood aster (*A. divaricatus*) along roadsides and wood edges that forms expansive masses that attract bees if not in deep woods. The aster season ends with the wavy-leaved aster (*A. underlatus*) a dismal let-down visually after the glorious New England asters, but the bees pay more attention to this than they do the New Englanders. If a sizeable patch of various asters can be established near a hive bees will work it on a sunny, warmish midday late in the year. It's no surplus by then but . . .

Maver's Nursery offers 25 species of asters.

Bidens, as already mentioned,


should be mowed annually. Meadows or wastelands housing goldenrods and/or asters would benefit from a mowing late fall or spring also. This prevents brush, wildflowers most relentless enemy, from taking over, as well as scattering seeds. Actually, with our increasing awareness of eco-systems, spring mowing for goldenrod and aster areas is better. Birds enjoy the seeds from both these genera for winter nourishment. Sloppy eaters that they are, birds drop enough seeds to spread these excellent late honey flowers to unexpected spots and across boundary lines in our neighbors land. Birds and bees aren't limited to our ownership rules. □

## Mentioned

- Crane, Eva, *A Book of Honey*. New York: Charles Scribner's Sons, 1980.  
 Jaycox, Elbert R., *Beekeeping in the Midwest*. University of Illinois, 1976.  
 Lovell, Harvey B., *Honey Plants Manual*. The A. I. Root Company, 1966, Second edition.  
 Martin, Alexander C., *Weeds*. New York: Western Publishing Co., Inc., 1972.

## Seed & Plant Sources


- Maver Nursery - Rare Seeds, Route 2, Box 265B, Asheville, NC 28805, (704) 298-4751.  
 Park Seed Co., Cokesbury Road, Greenwood, SC 29647-0001.  
 Thompson & Morgan, P. O. Box 1308, Jackson, NJ 08527, (201) 363-2225.  
 The Sandy Mush Herb Nursery, Route 2, Surret Cove Road, Leicester, NC 28748. (Not mentioned but has wild goldenrod plants.)




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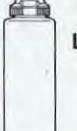
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# Progress & Programs

## — A Picture of the —

# NATIONAL HONEY BOARD

---

“...to promote a dynamic, profitable and expanding honey industry.”

---

MARY HUMANN



At its annual meeting in 1988, the National Honey Board developed the above purpose statement to stand as the cornerstone of all Honey Board activities. In addition, the Board drafted these goals for the industry...

- that those in the industry operate at a reasonable profit.
- that there be unity and a spirit of cooperation between all segments of the industry and with government.
- that there be an expansive dynamic marketplace for the use of honey.
- that there be, in the minds of the public, a positive image of the honey industry.
- that the honey industry produce products of quality.

Based on these goals, the Honey Board develops annual objectives and programs. Each program is assigned to an individual or company. A budget and a time-line for each project are established and a system for measuring each activity is developed.

Conventional views on advertising and public relations note that change occurs in stages. First, consumer awareness of the product increases, followed by a change in consumer attitudes. In the end, consumers increase their purchase of the product — demand increases.

The Honey Board's first year was a year for building — building an image, building a library of informational and promotional materials, building relationships, building a platform for increased use of honey by consumers, food-service operators and distributors and commercial manufacturers.

In the second year, using the first year's platform, the Honey Board expanded and heightened the awareness and demand for honey.

### Reaching the Industrial User

In 1988, 157 new manufactured products with honey were introduced in the United States — up from 100 new honey product introductions in 1987.

The Honey Board's Food Technology Team actively spreads the honey message to the food manufacturing industries while serving as a technical resource for the entire honey industry.

"Our goal is to pre-sell major food manufacturing companies on using substantial amounts of honey in their produce," explained Tom Payne, president of Thomas J. Payne and Associates, the Honey Board's agency which specializes in promoting ingredients in manufactured food products.

Payne reports that the honey hotline (a phone line set up to respond to food formulation questions from manufacturers) and face-to-face meetings with the food scientists and engineers of various companies in the \$450 billion U.S. food manufacturing industry have led to increased demand for industrial honey.

"The hotline receives 75-100 calls each month," said Payne. "We work with these companies on a confidential basis to formulate new products with honey."

The food technology team has recently released the Board's honey bear service mark for use on manufactured food products which meet the Board's standards of identity requirements. "Several major companies will be introducing the bear mark on their product's packaging," said Payne. "One product even doubled its use of honey in order to use the bear."

In addition to encouraging the use of honey in current products, the Board's food technology team explores new markets and avenues for honey product development, i.e., honey as a replacement for sulfites and as a clarifying agent in wines and fruit juices, honey in pharmaceutical products and others.

## Honey for Meals Away from Home

American consumers are eating away from home more frequently than at any time in the past. Sales at eating and drinking places rose 6.6% in 1988 to \$157.5 billion, according to the U. S. Department of Commerce.

The National Honey Board's 1987 Foodservice Market Research Study showed that 52% of foodservice operators used honey, but often in a limited capacity. Furthermore, foodservice operators did not view honey as a profitable addition to their menus.

The Honey Board advertising and promotion activities, therefore, have presented honey as a profitable menu addition. Ads titled *Just add honey. Make more money.* in 1987 were followed with current ads titled *Muffins with honey make more money.* and *Dressings with honey make more money.*

Over 5,000 inquiries for more information about honey were generated by the first series of advertisements, reported Mary Humann, public relations director for the National Honey Board.

In addition to the advertisements, the Honey Board has placed feature articles about honey in all major foodservice publications, including *The American School Food Service Journal*, *Baking*, *Western Foodservice*, *Restaurant Hospitality*, *Restaurants & Institutions* and *Foodservice Distributor*.

At restaurant shows and in response to requests generated by ads, articles and the honey foodservice newsletter, the Honey Board has distributed thousands of recipe cards, recipe brochures, buttons, posters and table tents.

Recently, the Honey Board created a Honey Holiday Promotion Planner to help foodservice operators and distributors develop special honey promotions. The kit includes a "honey of a holiday" planning guide, fun honey-loving bear artwork, stickers and more.

The Honey Board is currently developing specialized



promotions with foodservice distributors, including Sysco, Kraft and Gordons.

In addition, the Honey Board is continually making contacts with various restaurant chains in the hope of developing a joint promotion, said Humann.

## Bringing the Honey Message to Consumers

Consumers love the taste of honey and honey's down-home qualities: It's pure, natural, wholesome.

According to the National Honey Board's market research, however, only one-third of U.S. households purchase honey each year. And, many consumers (users and nonusers) reported that they did not know how to use honey.

The Honey Board's consumer advertising and public relations programs teach consumers how to use honey and encourage consumers to buy honey.

Advertisements showing a variety of honey uses and coupons have been a major element of the Board's marketing program. Cooperative advertising with Bisquick, Lipton Herbal Tea, Hot Ralston and Betty Crocker muffins have reinforced many of honey's uses. Coupons in packages of tea, Hot Ralston and in newspapers and magazines encourage the purchase of honey.

To bring the retailer's attention to honey, the Board has worked in target markets with radio advertisements and coupons to encourage special honey displays and store newspaper ads for honey.

The Board's public relations program continually shows new uses for honey. Honey Board recipes, features and photographs are provided to news-

**Honey! NATURE'S NATURAL INGREDIENT.**

COMPOSITION		CHEMICAL CHARACTERISTICS		PHYSICAL CHARACTERISTICS	
Energy	304 Kcal	pH and Acidity		Freezing Point Depression	15% honey solution: 29.44 to 29.25 (F); 1.42 to 1.53
NUTRIENT: Average amount in 100g of honey Range				A 68% honey solution freezes at	
Water	17.3 g			Specific Gravity	
Carbohydrates (total)	82.7			Dependent upon the water content:	
Fructose	42.1			Water Content	
Glucose	20.4			15% 1.450	
Maltose	1.0			18% 1.471	
Sucrose	21.2			Other factors such as floral source slightly affect specific gravity of honey. Honey from different origins or batches should be thoroughly mixed to avoid layering.	
Proteins, amino acids, vitamins, and minerals	< 0.1			Refractive Index	
Vitamins	Amount			Provides a rapid, accurate and simple means of determining the water content of honey.	
Thiamin	< 0.1			Water Content	
Nicotin	< 0.1			17.5%	
Niacin	< 0.1			Refractive Index (20°C)	
Pantothenic acid	< 0.1			1.450	
Pyridoxine (B6)	< 0.1				
Ascorbic Acid (C)	2.2-2.8				
Minerals	Amount				
Calcium	4.4-9.20				
Copper	0.003-0.10				
Iron	0.06-1.5				
Magnesium	1.2-3.50				
Manganese	0.02-0.4				
Phosphorus	1.9-6.20				
Potassium	13.2-168				
Sodium	0.0-7.80				
Zinc	0.03-0.4				

Analysis: Although relatively low in vitamins and minerals, honey contains more nutrients than refined sugar. Darker honeys contain higher amounts of lighter honeys.

**Waffles dazed with Honey**

**Breakfast on the Go!**

**NE Y**

**Nation**

**A Honey of a Muffin... A Honey of a Bear...**

**HONEY HOTLINE**

**AIB Study Reveals Honey Benefits**

The American Institute of Baking recently conducted a series of experiments to determine the effect of honey on baked goods. The study found that the addition of honey to breads and rolls resulted in a very good tolerance for fermentation conditions. The study also demonstrated that the use of honey could maximize loaf volume in sandwich crackers.

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**A NATURAL FOR BREAKFAST!**

**SEPTEMBER IS A BEAR A MONTH.**



paper and magazine food editors on a regular basis. Such publicity provides a high return on investment explained Humann. Published honey features are valued at over \$1 million, she said, yet cost the Board little to develop.

Publicity is also generated by the Honey Board in other areas of the media. Stories, ranging from the value of beekeeping in agriculture to a day in the life of the beekeeper, have been placed by the Honey Board.

The Board is currently developing an educational videotape to bring the importance of the honey bee message to elementary school children.

### Beyond the United States

To complement its domestic promotion programs, the Board recently received a grant of \$500,000 from the USDA's Foreign Agricultural Service to promote premium U.S. honey in targeted overseas markets: Far East, Middle East and Europe.

"Our goal is to increase U.S. honey exports to 15% from the current 6.5% of production within the next several years," said Hall. The Honey Board's past, current and future programs are diverse yet revolve around one purpose: to promote a dynamic, profitable and expanding honey industry.

"The Honey Board members, leaders and staff appreciate the industry's support," said Hall. "We see many opportunities. We've had some good results. We want more." □

**HONEY Trivia**

Did you know?

- A group of bees living in a hive is called a colony.
- There are three kinds of bees in a colony—a queen bee, drones and workers.
- A queen bee lives two to five years.
- Worker bees live only up to 40 days.
- The honeybee is the only insect that produces food for man.
- The honeybee has four wings.
- Honeybees collect two things from flowers—nectar for honey and pollen to feed their young.
- Utah is known as the beehive state.
- Honey is sweeter than sugar.

**Honey Board**

Volume 2, No. 5

**Honey of a Muffin**

Oat Bran

Wild Strawberry

NEW! OAT BRAN

### Honey A USER'S GUIDE FROM A-Z

**ADULTERATION.** The addition of other sugar substances to honey has been a concern of the industry for 100 years. New testing methods now allow the detection of cane syrup as well as HFCS (high fructose corn syrup). U.S. law prohibits adulteration.

**GRANULATION.** Honey stored at 57°F (14°C) (see GRANULATION).

**ENZYMES.** Enzymes (that converts sucrose into glucose and fructose) and organic acid and hydrogen peroxide from honey can go be present.

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# Tracheal Tragedy

MICHAEL BURGETT and B. A. STRINGER

During the winter of 1988 and early spring of 1989, unusually high colony losses were reported by many beekeepers in the Pacific Northwest. Several experienced commercial and side-liners described losses in excess of 50%, well above the 5-10% normal winter mortality. Most believed there was a connection between these losses and infestations of the honey bee tracheal mite (*Acarapis woodi*). Other factors suggested as contributing to the high losses included increased occurrence of dysentery and nosema, and extended cold periods — especially in late January and early February of 1989.

In an effort to establish the regional scope of winter losses and the reasons behind the reported mortality, the Oregon State Beekeepers' Association (OSBA) and the Honey Bee Laboratory at Oregon State University conducted a survey of the region's beekeepers using a questionnaire in the March issue of the OSBA *Bee Line*. The results of the survey, while especially important to the beekeepers in the Pacific Northwest, should also be of interest to any beekeeper living where the tracheal mite is found.

The tracheal mite was first discovered in the Pacific Northwest in November of 1985 and has spread continuously since then. It is now considered well-established in all beekeeping areas of the region. The Chief Apiary Inspector of the Oregon Department of Agriculture informed us that it is probably present in every county in the state although not every apiary in every county is necessarily infested. We assume, then, a fairly even distribution of

the mite throughout the beekeeping areas of the state.

For beekeepers in the Pacific Northwest as well as the rest of the U.S., effective controls for the tracheal mite would be welcomed. While menthol was not yet approved for use in Oregon, many beekeepers administered this material to their colonies as a preventative treatment in 1988.

Respondents to the survey included a mix of hobbyist, side-line and commercial beekeepers. The 13 hobbyist respondents, defined as those with fewer than 100 colonies represented a small proportion of the colony losses. None of the hobbyists treated their colonies with menthol in 1988. Winter loss in the hobbyists' 291 hives was 38 colonies (13.0%). We do not consider this a significant increase over expected win-

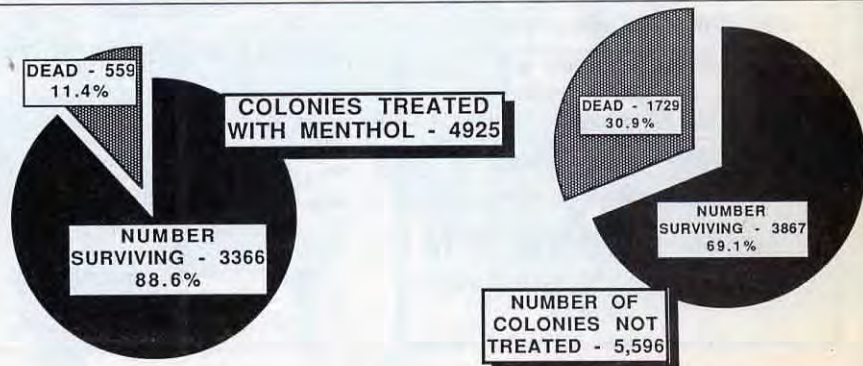
ter colony losses.

We combined the information from the side-line and commercial beekeepers in our analysis. For this group, most of whom are migratory, we set a minimum size limit of an individual owning more than 100 colonies. All together, the 20 commercial/side-liner respondents owned a total of 10,521 colonies. The 1988/89 winter loss for this group was 2,288 colonies (21.7%). The majority of beekeepers responding live in Oregon, but a few from Washington also provided information.

One of the most significant findings was the comparison of the average winter mortality between colonies from beekeepers who did and did not treat with menthol in 1988. The number of hives treated with menthol was very similar to the number of colonies

**TABLE 1**  
**Colony mortality related to menthol treatment**

	Treated 1988	Not Treated	Combined
No. colonies:	4,925	5,596	10,521
Colony mortality:	559	1,729	2,288
Percent loss:	11.4%	30.9%	21.7%



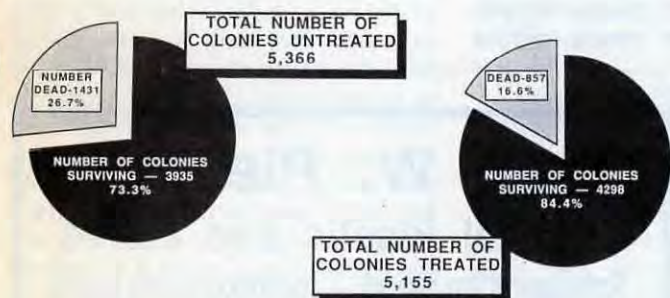
untreated, which allows a fair comparison. Table One shows the results of the findings. There was a significant difference in losses between those colonies treated with menthol and those not treated. Losses in untreated colonies were nearly three times higher than losses in colonies treated with menthol. Untreated colony losses were 31.9%, while treated colony losses were 11.4%. This is the most clear-cut observation to emerge from the survey.

While the results of this survey provide strong circumstantial evidence that the tracheal mite influenced winter mortality, other stresses could contribute to the high winter losses. Some of these factors were considered in the survey. Because most of the hobbyist respondents did not provide information in these categories, our findings are derived from the commercial/side-line group.

Those beekeepers who treated hives with fumagillin for nosema control in 1988 had a lower colony mortality compared to those beekeepers who did not treat (see Table Two).

**TABLE 2**  
Colony mortality related to nosema treatment

	Treated 1988	Not Treated
No. colonies:	5,155	5,366
Colony mortality:	857	1,431
Percent loss:	16.6%	26.7%



We examined the effect of menthol and fumagillin treatments on colony mortality. Beekeepers who treated for both tracheal mite and nosema had a winter loss of 11.4%. Beekeepers who did not treat for either condition had a loss of 31.3%. Beekeepers who treated for nosema but not for mites had a loss of 27.9%, and finally beekeepers who treated for mites but not for nosema had a colony loss of 9.1% (see Table Three). This evidence suggests that while nosema disease had some influence on winter losses, the major contributing factor was use of menthol in 1988 as a preventative or control against tracheal mites.

Evidence of dysentery was apparent in only 13.3% of the dead hives. Beekeepers who had treated for nosema disease in 1988 reported a dysentery rate of 8.7%, while those who

**TABLE 3**  
Colony mortality related to menthol and/or nosema treatment

Treated for nosema:	yes	yes	no	no
Treated for mites:	yes	no	yes	no
Losses (%):	11.4	27.9	9.1	31.3

## Menthol How-To

If your colonies are infested with tracheal mites or you strongly suspect they are, it's a wise move to treat them with menthol crystals this fall after the honey flow. This will greatly increase their chances of surviving the winter.

The recommended treatment calls for using 50 grams (1.8 ozs.) of menthol crystals or pellets for each treatment.

Dr. Bill Wilson, of the Weslaco Bee Lab in TX, makes the following suggestions for applying menthol. He says to use a piece of either plastic or metal window screen, cut to about twice the size of a Reader's Digest cover (10" X 7.5"). Place the menthol on the screen, fold it over and staple the three sides shut. Don't overdo with the staples if you're going to reuse the screen. Make sure the crystals are spread out as much as possible so you get maximum fume production.

If you're using crystals, you will have a problem with the smaller particles sifting out of the screen and not being used. To avoid this, use aluminum foil or cardboard on the bottom, with the screen on top. Some beekeepers are using loosely woven cloth bags, about the same size as the screen packet, sewn together on three sides and stapled on the fourth. These work well, are reusable and you won't lose those tiny pieces.

Of course the pellets work equally well, and though there is added expense, the ease of use compensates for the cost.

Probably the most critical factor is the outside air temperature when you apply the menthol. If the temperature gets over 80°F during the day, and you have a normal to strong population, put your packet of menthol on the bottom board, in the back third of the colony. However, if the outside temperature doesn't get above 60°F, place your packet on the top bars, directly over the brood nest. The next question, of course, is what do you do between 60 and 80°?

Dr. Wilson recommends that if the colony tends toward the weak side, put the packet on the top bars. But, if it's strong place it on the bottom board. He says that every location and every colony is different, and each beekeeper needs to test their treatment technique to see what works best.

Ideally, you want 10 - 14 days of strong menthol fumes in the colony for best control. If the weather is fairly warm you may need to make two applications of menthol because of the rapid evaporation. With cooler weather you may have good success with only one treatment.

One caution Dr. Wilson makes is that by adding too much menthol, or having it evaporate too fast (too warm outside) you may run the bees right out of the hive, and in extreme cases kill some bees and brood.

Some commercial beekeepers suggest that this is O.K., since the bees that die are old and infested, but Dr. Wilson isn't yet convinced this is the case.

He also says many commercial beekeepers are examining their bees for infestations, and are treating only when they reach a certain level. However, as of now there are no recommendations being made for treatment levels. He also recommends that you check your bees again next spring before the honey flow, and repeat treatments if necessary. He stresses that you absolutely must read and follow all label directions carefully. It is the law.

"The cost of treatment is high in terms of both time and money," Dr. Wilson says, "but the cost of a lost colony is far greater." □



had not treated reported a rate of 15.3%. While a strict interpretation of these results is difficult, it would appear that medicating colonies for nosema control reduces the incidence of dysentery during the wintering period. No relationship between the presence of mites and dysentery could be established.

Knowing whether or not their colonies were infested with tracheal mites strongly influenced beekeepers decisions to treat with menthol. All beekeepers who were aware of the presence of mites in their operations treated with menthol in 1988. This group of individuals averaged 12.5% colony mortality. For those whose colonies had been tested and did not have mites, 19.8% of their combined 3744 colonies died. None of this group treated with menthol. Considering that some of the testing for mites was done 18 months to two years ago and that the tracheal mite has rapidly spread throughout the state, it is probable that several of the previously mite-free operations had unknowingly become infested by the end of last year. Responding beekeepers who did not know whether or not their colonies were infested with mites represented a total of 2872 colonies, in which

there was 24% mortality. None of these beekeepers treated with menthol, and it is likely that many of these apiaries had become infested with tracheal mites. This situation emphasizes the importance of continuing survey programs for the presence of tracheal mites throughout the region. Individual beekeepers are well advised to have their operations examined for the presence of tracheal mites. Although menthol treatment is relatively expensive, the loss of entire colonies is more costly.

Reports of high losses during the almond pollination period in California led us to question when and where the Oregon-registered hives had died. Using information from 12 migratory beekeepers in the survey, we found that almost 85% of their losses took place in Oregon before the hives were moved to California where the remaining 15% of the losses occurred. Respondents reported many more dead colonies with very few bees remaining, as opposed to those with large numbers of dead bees inside the hive.

Pacific Northwest commercial beekeepers, and especially those who pollinate almonds, impose many stresses on their hives. To check colony strength and condition prior to moving colonies

to California, hives are opened in mid-winter, often disturbing the cluster. Transportation of colonies during the winter is another stress. Nosema, food shortages, the shock to Pacific Northwest colonies exposed to the instant "Spring" in California at almond pollination combined with the presence of tracheal mites, can tip the scales to where even experienced beekeepers will suffer increased winter mortality in their colonies.

Conclusions from the results of the survey suggest that the tracheal mite exerted a strong influence on the colony losses during the winter of 1988/89, and that all beekeepers in the region should begin a treatment program for mite control that utilizes menthol as a fumigant as soon as honey removal is completed in the late summer. □

*The authors wish to thank all the beekeepers who responded to the survey. Their participation helped clarify some of the factors affecting the elevated colony winter losses experienced by the Pacific Northwest beekeeping industry.*

*Bertie Stringer is a Laboratory Assistant and Michael Burgett is Assoc. Professor of Apiculture at Oregon State University, Corvallis, OR.*



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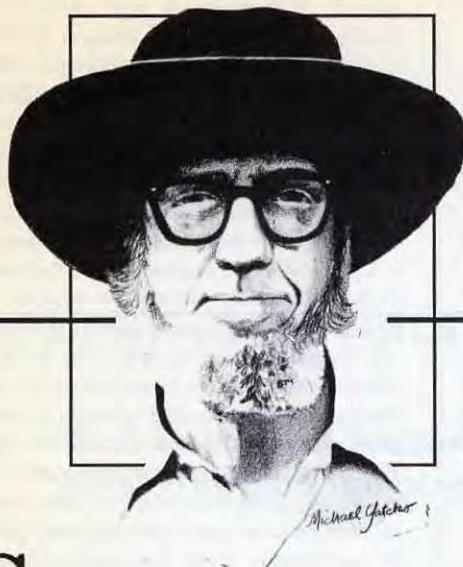
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# BEE TALK

RICHARD TAYLOR

9374 Route 89, Trumansburg, NY 14886

*"The first rule of beekeeping  
— have strong colonies!"*

**S**ometimes I think I don't know much of anything about beekeeping, and worse yet, I seem unable to put into practice some of the things I think I have learned.

For example, you've got to have strong colonies. That much I do think I know. And you've got to keep them from swarming. That is obvious. My customary way of preventing swarming is to split a few combs of brood out of the strong colonies that look like they might be inclined to build swarm cells, replacing these with empty combs or with foundation. And with this simple approach I got off to a great start this spring. My colonies were, for the most part, exceptionally strong. I had left plenty of honey in the hives the previous fall. A few had succumbed to tracheal mites, however. No problem. I just split combs of brood and bees from my strongest colonies, swapping them with combs from the dead colonies, and requeening these, thus carrying into effect my swarm control system and restoring the mite-killed colonies at the same time. That worked splendidly. In no time my apiaries were all back to full strength and the individual colonies were all building up again at a great rate. For days I was boasting to my wife what a truly outstanding beekeeper I am.

But then things started going wrong. The rains came, and continued unremittingly for weeks. I never saw so much rain. I took this as an opportunity for a respite, and spent my spare time getting supers ready. There were a few days when the rain stopped, at least for awhile, but I sort of figured that with all that rain, the bees couldn't be doing much anyway. That was my mistake, of

course. Rain or no rain, the bees were building up like mad. When the weather finally cleared it was time to get those supers on, urgently. I was wishing I had somehow gotten them on sooner. And it was also time to be splitting out some more combs of brood, to keep the swarming down. But it was too late for that. I had let things sort of get away from me. And that's when I stopped boasting to my wife and began asking myself, "Am I ever going to learn?"

The season that had thus begun so wonderfully then turned depressing. More rain came to ruin the black locust crop, and I was already getting requests from far and wide for locust honey. The fruit bloom and dandelions had similarly been wiped out. Nothing was happening in the supers, to speak of. The sumac then bloomed, but I never

saw any bees visiting it. Basswood held out the only remaining hope for a comb honey crop. But then that seemed to fizzle, too. I couldn't find any bees in the basswoods when they bloomed. The huge basswood next to my cottage was humming with bees, day after day, last summer. This summer I couldn't see any bees there at all, and then the blossoms began to dry up and fall.

It looked like a total crop failure, partly due to the weather, but partly due to my own failure to keep up with things. I can't make things bloom, but I should have been better prepared for whatever might bloom, and I felt sure I was going to lose lots of swarms by my procrastinations. I checked my bees, and they still didn't seem to be doing much in the supers.

So, after about a week, in a state of considerable depression, I went off to the yards, thinking I might get a little honey. My hope was that, if it was going to be a crop failure, then perhaps it would be such a total failure that the bees would not have done a thing in the supers, and maybe I could just take them home and put them back on the hives again next year.

Well! I got to the first yard to find the supers loaded with honey! Practically every hive had a good crop already, even one I had written off as too weak to expect anything from. I was totally flabbergasted. Where had they gotten the nectar? And how had they moved so fast? The next day I drove off to another yard, one that is located only about thirty feet from the road, but totally concealed by the trees. I've got about twenty colonies there. And as I

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Continued on Page 527



# SIFTINGS

CHARLES MRAZ

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*"Breeding bees resistant to diseases and pests is the only way to solve our problems."*

**T**his past winter, Acarine Disease reared its "ugly head". Some predicted it wouldn't be much of a problem here in the U.S., but this past winter's experience indicates how wrong we were. There are several beekeepers in Vermont, within a few miles of us, that had heavy losses; but as far as we know, after extensive testing, we do not have the problem. Our bees came through the winter in excellent condition, maybe because we never buy outside bees or queens.

In northern New York the problem is wide spread and they also experienced heavy losses. One beekeeper packed away 300 colonies last fall and lost 275 of them. In fact, some have estimated that in this area about half of the bees died last winter. Will this coming winter wipe out another half of the bee population? Obviously something must be done.

Some colonies that die from this disease can be distinguished by the tendency of the bees to crawl out of the hives. Apparently mites build up in their tracheae making it difficult to breathe. Then they crawl outside, perhaps looking for air. In the winters we have here in the north it is too cold for them to survive outside of the hives.

Losing bees is bad enough, but just as serious, I would think, is how to protect the combs in the hives that die out, still full of honey and pollen. What a wonderful feast for the wax moth when warm weather comes. How to secure these combs against complete loss, without bees, is something to think about. What can a beekeeper do with hundreds of hives full of combs, honey and pollen but no bees to guard them?

While menthol is a temporary solution to controlling this disease, it is not the permanent answer. This can only be achieved by 1) raising bees resistant to the disease, or 2) biological control. There is no question that bees in England have some resistance since they have survived for over 70 years since first exposed to it. Then it nearly wiped out all the native bees in England, but a few resistant strains survived, and from them, along with other hardy lines which were imported, their present resistant types developed.

It's been known for a long time that bees in the U. S. are not resistant to Acarine. In almost every case, when bees from here were exported to England they quickly died from this disease. Some of my disease-resistant strains have been exported to England and one beekeeper, who had some of my queens several years ago, claims that "Mraz" queens, when crossed with his British bees, produced an excellent resistant strain.

Roger Morse's program to produce queens resistant to Acarine Disease will use our drones along with others to

cross with virgin queens raised from his imported English queens. He will then test their resistance. The big question is — will it work? Personally, I believe it will, since this is not the first time I have been involved in a large-scale breeding program.

Back in the 60's I worked with a beekeeper in Vera Cruz, Mexico. He had about 5000 colonies all afflicted with paralysis. It was hard to find a hive with more than 5 frames of bees and brood. We moved some of these bees to the orange groves in the Jalapa area in the mountains, west of Vera Cruz. Two weeks later when we went back to check them, the ground was covered with dead bees. There was hardly a bee flying.

I had previous experience with paralysis and I knew that requeening with bees resistant to this problem would clean it up. I sent the beekeeper some breeding queens of resistant stock to requeen his whole outfit. Naturally, as soon as a yard was requeened with resistant stock, the colonies built up rapidly.

A few years later a similar problem



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developed with a beekeeper in the Puebla area of Mexico. He had about 4000 colonies infested with European Foulbrood. Even though they were feeding terramycin by the kilo they couldn't clear it up. About 80% of his colonies had EFB. Another 10% had AFB and the rest had some paralysis. There were virtually no healthy colonies in the whole outfit.

Again we went through the same program. We requeened with resistant queens and the problem cleared up. Three years later I checked those colonies personally and couldn't find a hive with EFB. The combs were not treated nor was medication fed to them. Only the queens were changed. There is every reason to believe the same results can be obtained with resistance to Acarine.

If we do solve the Acarine problem, next comes the Varroa mite. It seems like we will have to solve one problem at a time. After all, bees have been on this earth for a long, long time without any help from beekeepers. I am sure they will be here a long time to come — long after all of us have entered the "Land of Milk and Honey". □

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## BEE TALK...From page 525

got out of the car I could hear the low, gentle roar of the bees that told me there would be lots of honey there, too. And there was! It was even better than the first yard. And so it went with the third yard.

So now I'm getting the honey packed, ready for waiting customers. It is truly beautiful. I have no idea what kind it is. It is rather different from anything I usually get.

And all this has led me to the same conclusion I arrive at every year. I really don't know much about bees. They are a mystery to me. I've given up trying to figure out honey flows.

But one thing I think I do know, and I pass it along for what it may be worth, the first rule of beekeeping is: Have strong colonies, all the time — spring, summer, winter, fall. But there is a second rule, and that is: Do things on time. Get a step ahead of the bees, and things will work out all right. Get a step behind and you will never catch up. How I got a crop of comb honey this year I will never know. But I do hope that next year I'll know enough to put into practice the two rules I just enunciated, especially the second. □

Questions and comments are welcomed. Use Trumansburg address and enclose a stamped envelope for reply. Canadian stamps are okay.

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revenues and interest. So what's the problem?

A few things come to mind immediately. Belonging to a group is not as socially important as it used to be. If you go way back, memberships once gave you an excuse to relieve the isolation of a week (or longer) on the farm. Of course there were tasks to perform, but the chance to see other faces was worth almost any effort.

Groups can't count on that anymore. Though isolation, even in huge cities remains a part of the human condition there are more choices, more opportunities to alleviate it.

And in spite of what some say, there are more demands on people's time than ever before. For most of us the work week does not include travel time, pick-up-the-kids time, shopping time, family time . . . All important, none critical. Too, the 40 hour work week itself is somewhat of a myth, at least for many of us.

But most find time to do the things that are really important, and manage to squeeze in those that aren't quite as important, or must get done anyway. And here lies the key, the simple answer to 'Where's The Members'.

Simple economics, very simple economics, tells us that if people like something (or really need it) they will buy it. On the other hand, if they neither like or need it they won't buy it. So I say to the president and secretary mentioned above, there's your answer — you are not providing a product that new or old members want or need.

If this is the case — falling memberships, empty coffers and general apathy your Board of Directors should be scratching their collective head and making some hard decisions. Because, quite simply, your group is not providing what the members want. Like TV channels, they have many and varied choices on how to spend their time, and these choices are all competing with your group for that time. And winning.

The decisions to be made may not be as obvious as you think though. The

first — "Is the patient worth saving?" — will probably be the hardest. And to answer that you need access to some basic information.

First, how many current and potential members are in your defined area (city, county, state). Then, using my rule of thumb (developed during years of similar frustration), that about one in ten beekeepers is a joiner, can your area support a 20 to 50 member group? Remember, there probably aren't as many beekeepers in the area as there were even 10 years ago. Attrition, development, bad management, zoning and lots of other reasons have taken their toll lately, and our numbers are declining.

What this means is that you'll need access to about 200 to 300 beekeepers to get a group going, or to maintain an existing one.

Once you have this number in hand, you have to have a certain ratio of Indians to Chiefs. You'll need 2-3 'leaders', 2-3 'thinkers' and 5-6 'doers' to keep things going. These are the people who do the planning, and the running and the work to set up the big fall sale at the mall (isn't that ironic), to get the fair booth set up, to get meeting announcements sent out and all the rest of the things needed to just keep going. Most businesses call it Overhead — but I like to think of it as the nuts and bolts of survivorship.

So, after you and your Board of Directors have collectively head scratched and come up with an answer, the answer may be 'no', the patient is

not worth saving. There may be too few members, or too few potential members, leaders or workers. Of course this makes the rest of the problem easy. Turn off the light on the way out, shut the door and call it a day. Yours won't be the first, nor the last group to have a final roll call. There's no shame here — it just happens.

But if you decide to keep it going, you need to decide 'what is the patient worth?' Though not easy to answer, the first step is to look at your treasury. Having \$1000 is one thing, but \$53.29 is something else altogether.

Next month, we'll take a look at some of the things that need to be done, and some that are good to do if time, energy and funds permit. Stay tuned.

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# QUESTIONS?

## REGULATING BEE ESCAPES

**Q.** I have trouble getting bees to leave the supers using the Porter two-way bee escape. How far apart should the little metal bands be in the bee escape?

Michael Buccieri  
East Aurora, NY

**A.** I have used these escapes for decades, and have found that it does not matter much what the spacing between the metal bands or springs is, provided it is as small as or smaller than a bee. But I have found that these devices work much better with escape screens rather than with solid inner covers. I normally leave them on the hive for two nights, and the bees are all or almost all out by then.

## WAX WORM WANDERINGS

**Q.** How can wax worms get into combs that are stored in sealed places inaccessible to the moths? And what about sealed containers of foundation?

Roger Kull  
Strasburg, IL

**A.** Stored combs often have wax worm eggs in them, and if they do not, then I believe the moths lay eggs in cracks, through which the worms can crawl. In any event, combs that are stored in sealed containers, such as supers and hive bodies, are extremely vulnerable to wax worms, which thrive in closed places. Wax worms will rarely develop in combs that are stored in the open air or otherwise well-ventilated, especially if exposed to light. They are also destroyed, including the egg stage, if exposed to extreme cold, that is, 0°F. Some commercial beekeepers store their supers over wire screen on the northern side of a building, where they are least exposed to the sun's warmth, covering them to protect them from rain. The bees lick them dry, and the fresh air circulating from underneath prevents wax worms. Most comb honey producers pass their sections through a freezer to eliminate the worms of the smaller wax moth. As for foundation, it is rarely attacked by worms because what the worms seek out is not

wax, but the protein that is in pollen and in the remains of bees and larvae.

## WHICH HIVE IS WHICH?

**Q.** My neighbor has a hive about 300 feet from mine. My honey was much darker than his. Neither of us extracted from brood combs, and we harvested the honey the same week. The only difference was that he used a cold knife and I used an electrically heated knife. Would that account for the difference?

G. Hartke  
Middletown, CT

**A.** I am virtually certain that the electric knife had nothing to do with it. I have sometimes been surprised to find very different types of honey coming from the same apiary at the same time. Apparently the entire honey bee colony tends to orient itself to a single source at a given time, especially when such a source is plentiful and bountiful. When two such sources bloom at about the same time, then one colony might concentrate on one and another nearby colony on the other.

## CLUSTER PERMIT NEEDED?

**Q.** Why are my bees congregating in large numbers on the landing platform, but showing no inclination to swarm? Are they fanning new nectar?

Dr. Verne M. Marshall  
Geneva, NY

**A.** Bees often do this in late summer and early fall when there is little nectar in the fields. Often, bees on the front of the hive will then be observed facing downward and doing a peculiar motion aptly called the "washerwoman" dance, the explanation of which is not really known. This behavior does not portend swarming, and is perfectly normal.

## A STICKY SITUATION

**Q.** I have two hives. What can I do with the sticky combs after extracting the honey? If I set them out in the yard it creates robbing and the bees sting. If I leave them on the hives all winter the bees cluster in them and then the queen lays in them.

Andy Kinghorn  
Greenville, SC

**A.** It is true that exposing sticky combs in the open creates a frenzy with the bees, but this does not normally result in a tendency to sting. The combs can be exposed at some distance from the hives, and from people, and the bees will find them and lick them dry very fast. Needless to say, one must be certain they are free of disease spores. Combs can also be stored sticky provided they are protected from mice.

## BAD TASTE TEST

**Q.** Our granddaughter is a university student, and in a class in apiculture the instructor passed around a sample of honey with only one spoon for all the students to sample from. Some thought this was not sanitary, but the instructor assured them that honey kills bacteria, and not to be concerned. Is this true?

Bernard Lockstampfor  
Newport News, VA

**A.** It is true that most bacteria cannot develop in properly ripened honey, but honey should not be thought of as a germicide, and I would certainly recommend against the practice you describe. It is a simple matter to provide plastic spoons using one per taster.

*Questions are welcomed. Address them to Dr. Richard Taylor, 9374 Rt. 89, Trumansburg, NY 14886, enclosing US or Canadian stamped envelope for reply.*

# — ANSWERS!

Richard Taylor



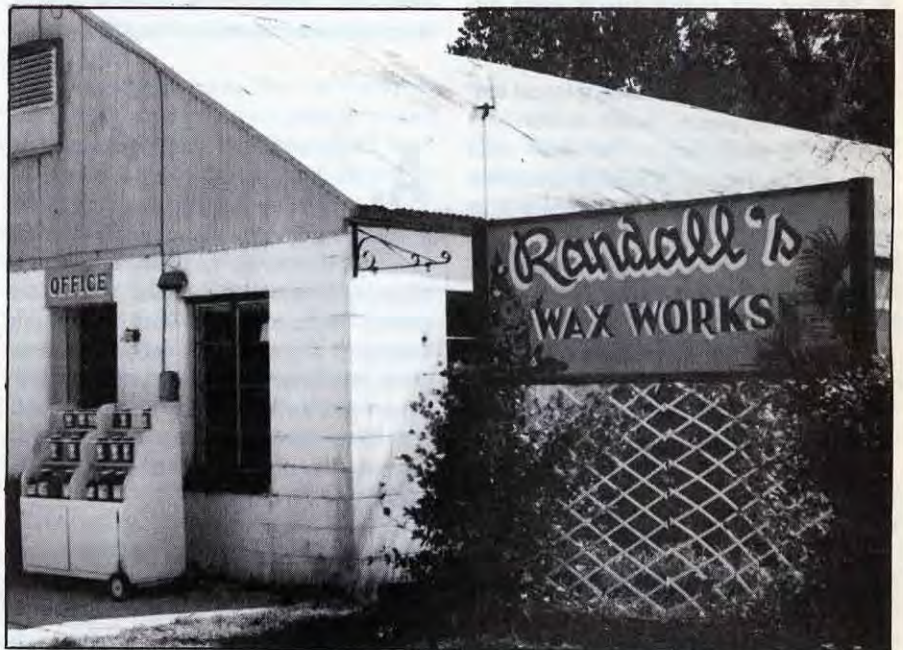
# Randall's Wax Works

KIM FLOTTUM

Randall's Wax Works sits just off Main Street in what seems to be just another mid-size Florida town — sunny skies, sandy soil and palm trees everywhere. And even though it was the end of October when we visited, the weather was hot and sticky. Only 50 miles west of the Cape, where the space shuttle calls home, Umatilla boasts of Randall's Wax, a large Dadant branch, and an old Sioux Bee Warehouse facility (now empty). Beekeeping is definitely a part of this community.

Frank and Charlotte Randall oversee several enterprises, but all have to do with bees and beekeeping. They own about 2000 colonies, which summer in North Dakota looking for some of that fine light honey. Though not personally cared for by Frank, he makes sure they get there in the spring, do well in the summer, and get back to winter grounds in Florida come fall.

*Frank Randall, who, along with his wife Charlotte, operate Randall's Wax Works in Umatilla, Florida.*



*The front door to the facility. Honey and foundation sales are handled right inside the door. The rest of the facility — rendering, foundation manufacture and storage, are all in the back. The beekeeping part of the business is handled in an adjacent workshop.*

*The pressure filter used to clean the wax. There are 20 paper filters here that the wax is forced through.*

But beeswax is what this business is famous for, and that's why we stopped in — to get a taste for the wax and foundation part of this outfit.

Most hobbyists can't take full advantage of the Randall's business because their efficiency starts with barrels of wax, and it takes a lot of old comb to fill a barrel. But, you can bring in collected wax and trade it in for credit toward foundation or just exchange it for cost at current market value. But if





One of the plates where Frank is removing the filter paper, showing the dirt and foreign material that accumulates in each.



What the inside of the storeroom looks like — piles and piles of wax, of all colors and kinds.



A single cake with a quarter sitting on top.

you have a barrels worth of any kind of wax — whether old comb or cappings — you can do well by stopping in.

Frank handles all cappings with what is essentially a big brand melter. Using steam heat he can quickly separate the wax from whatever honey is present without overheating. This is run into a large plastic pan to harden while the honey is discarded. Cappings make the finest wax, and command top price for any use — foundation, candles or art.

Barrels of other wax — old comb, burr comb and the like are placed, barrel and all, in a huge stainless steel tank (7'L x 3'W x 4'D) with water already in place. The water is brought to boiling using steam and the wax melts and is removed.

Then the wax is either stored for future use (Frank has a roomful of stored wax) or it heads for the foundation department.

Foundation wax needs to be clean and pure, and to get it that way the Randall's run it through a pressure filter system. Using filter paper similar to milk filters, the wax is forced through a series of 20 of these, removing virtually all impurities. The resulting pure and beautifully lemon-colored wax then goes to a sheeter, embosser and if needed, the wire embedder to become next years starting line for the honey crop.

No matter how the wax is rendered, brand melter or water tank,

there is always some residue at the end. By Charlotte's estimate, the brand melter leaves 45% of the wax in the debris, while the water tank only leaves 15%. When you're in the wax business you can't afford to waste that, so Frank runs it through a huge, doesn't-leave-a-drop, wax press. Squishing the slumgum, under heat of course, at something like 15 tons/square inch, very little wax is left after an overnight ordeal. During this process, reclaimed melted wax runs out of the press well into a settling pot with baffles, and is finally collected in the standard plastic pan.

The remaining slumgum is disposed of in a large area behind the processing plant that has been collecting Randall's waste since Frank's father started the business. Fortunately, this is a biodegradable product and, in

fact, has added to the organic content of the local sandy soil.

Both Frank and his father are mechanically inclined and between them have built most of the equipment they still use. The press was 'borrowed' from another task; the sheeter and embosser are unique and efficient; and the wire embedder is a wonder to behold.

Frank's son still works for the family business and tends to be, like his father, a specialist in everything. The day we visited he was stapling frames, but he's involved in all aspects of the business.

Charlotte keeps busy selling honey and making sure the books balance — certainly a needed skill in any business — and especially in an outfit that runs three businesses. "Three at least", she says. □

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# Making Molded Candles

DIANA SAMMATARO

Candles were once the only source of light in homes all over the world. The basic components are fuel, wicking and a holder. These days, making candles is not so much a necessity as an art form for homes or a symbol for churches or synagogues.

Traditionally, many types of waxes, fats, and oils were used as fuel for candles. These fuels were collected from plants (bayberry or carnuba), animal fats (oil, blubber or lard), and insects (beeswax). Today, petroleum in the form of paraffin is the main source of candle wax.

But while paraffin has some good qualities, nothing lends itself better to candle making than beeswax. It has been used for thousands of years, first in the Old World, then as bees were brought over with the early colonists

into the New World. Its value as a candle fuel comes from its high melting point — beeswax candles will not bend in hot weather. They also burn with a clear, smokeless light and give off a wonderfully sweet odor when lit.

The methods most commonly used for making beeswax candles are to pour molten wax into molds, or to dip wicking into the melted wax. This article deals primarily with making candles in molds.

## The Wick

Ancient candles, called splinter candles, had straight-grained pine sticks as wicks. Soon strings of linen or flax were used, then wool shearings were showing up in ancient Greece and Rome. Egyptians dipped reeds in beeswax and Eskimos used animal tissues

for wick with their blubber candles.

Cotton was the next material to be used and was found to be superior. However, the first wicks remained upright when burned, allowing a black "cauliflower" to form which, unless trimmed off, dimmed the light and emitted dark smoke. It wasn't until 1825 when a Frenchman discovered that by braiding the wick it would bend over when burning, thus coming into contact with the hot, outer part of the flame. The "cauliflower" was then completely consumed and no longer needed to be snuffed or trimmed.

Make sure the wicks you purchase are for beeswax candles and not paraffin or other materials. Usually a square wick works best. In general, they need to be about double the thickness of wick used for paraffin candles, but experiment or buy your wicking from bee or candle supply stores. If your candles smoke, drip or form cauliflowers, change the wick.

## Making Candles from Molds

There are many kinds of candle molds on the market, sold by candle making companies as well as beekeeping equipment suppliers. They range from metal tubes and decorative "cookie" molds, to rigid or flexible plastic sheets or tubes.

Before starting your candle making activity, there is one trick I highly recommend. Make sure the inside of the molds are clean and free of any particles that would discolor your candle or cause it to stick. You may lightly spray or coat the inside of the mold with a silicone release spray or use a non-stick cooking spray. Glycerine, liquid detergent, or a mixture of the two are also used. Paint liquid soap with a brush into the crevices of complicated molds, but leave no bubbles. Be careful not to get TOO MUCH of this material or it

*Start your candle-making with the cleanest wax possible. If you don't have any, many places will sell cylinders of refined wax.*



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*This is the equipment necessary to melt down those beautiful cappings. You need a heat source, a pail with a spout, and boiling water.*

could cause the opposite affect and make your candles stick!

Then, set the wick in the mold. A good anchor to hold the wick straight in the mold and keep tension on it is masking tape. This helps cover the hole and hold the wax in place. To hold the top of the wick straight, use a toothpick, bobby pin or other stick. Keeping the wick outside the mold seems elementary but you'd be surprised how often it doesn't happen. Next, clamp the mold together with clips or strong paper clamps. Then set it upright in a pan of sand or other appropriate holder. I recommend using this because often wax will leak out the bottom no matter how well you plugged it and a good catcher is ideal to save tables or dishes. Also, the mold needs to be steady since filling it may make it heavy on one side or another, or top heavy, causing it to spill.

Before filling, make sure you warm the molds to room temperatures or even higher with a heat fan or other means. This will slow the cooling time of the candle, essential for beeswax.

## The Wax

Many people don't realize they can get beeswax from local beekeepers, a fact you can capitalize on. It is usually sold in chunks since beekeepers get their wax from cutting the wax cappings off the honey comb. They take

these cappings, soak them in rain-water, then melt them in a special stainless bucket with a spout. Once the wax has melted, boiling water is slowly poured into the bucket so the melted wax can flow out, is filtered and allowed to cool.

If you must purchase wax, make sure it has a beautiful lemon-yellow color and is free of debris. You can also buy refined wax, but much of the yellow color is filtered out. Don't worry about the whitish "bloom" that covers wax. This is a natural part of beeswax and is easily removed with a cloth.

Take your wax home and cut it into smaller pieces so they melt faster. Put your wax into a pan or coffee tin and put that pan into another pan of water. ALWAYS heat wax over water and never over direct flame. Wax is extremely flammable. I recommend heating wax over an electric stove if possible to avoid open flames.

Once melted, strain your wax again to make sure all fine debris is gone. Your candles will burn cleaner if all of this fine stuff is filtered out. Take a piece of cheesecloth and tie it over another cleaned coffee tin or old metal juice container. On top of this cloth, place one sheet of facial tissue. Pour your wax through the filters. Allow it to drain out, change tissues and pour again. (These wax-filled tissues are great for starting grills or fireplace

fires.) Keep changing the tissues with each pouring until you have used up your entire batch. Now you have cleaned wax, ready for the molds.

## The Molds

Pour your now strained and liquid wax into the warmed molds. Allow it to set awhile (from 10 to 30 minutes, depending on room temperature) then fill in any shrinkage hole with more hot wax. Pry open the wax skin with a toothpick so you can see how big (deep) the hole is. You may have to do this several times.

Slow cooling is best for beeswax since it will not crack or distort as with rapid cooling. Be patient. If possible, stand the mold in warm water, wrap it in newspaper, or at least cover the container it is standing in. Put in a draft-free area and let cool.

Make sure the candle mold and wax is cold to the touch when you begin to remove the mold. Large candles may need to be left overnight. If metal molds still stick, put them in a freezer for 15 minutes or so then a sharp tap should release the candle. Allow your new candle to air dry then wrap in tissue to keep it safe. Trim off the edges where the mold halves come together using a sharp knife. Then your candles are ready for sale, or you can add ribbons, paint, glitter or other decorations for that final "I made it myself" touch. □

*You can make all sorts of things using molds ... and candles are only one. Christmas decorations, sewing accessories and carpenters blocks are only a few. I put a little label right on the warm wax with my name and address, along with information about how to use it. It makes resale a snap.*



# Good Neighbor CONTEST

Are you a Good Neighbor? Are you a beekeeper who is careful with your craft, yet proud to be beekeeping?

We're looking for Good Neighbors — beekeepers who take care of their bees so they don't cause problems — good swarm management, proper screening, sunny-day working, water provision and all the rest of the good things beekeepers need to do to keep profiles low when keeping bees in an urban setting.

And, for the best Good Neighbor we find, there is a \$50 cash prize and a chance to help spread the word on how to be a Good Neighbor Beekeeper.

But we know there's lots of Good Neighbors out there, so we have three second place prizes of \$25 each. And, for the next 10 best plans, we have a one year subscription to *Gleanings*.

Here's all you have to do to enter the Good Neighbor Beekeeper Contest.

1. Send us 3 or 4 photos of your urban, suburban or even country apiary setting. If you have neighbors you qualify! They should show all the necessary requirements to be a good neighbor. Color or black and white prints are best. Try and avoid slides.
2. Send along a sketch showing the location of your apiary, your house and lot, and where these are in relation to your neighbors. Sort of like the drawing on this page. This doesn't have to be an architects drawing, but neatness does count.
3. Write up a short (about 2 pages typed double spaced or 3-4 pages

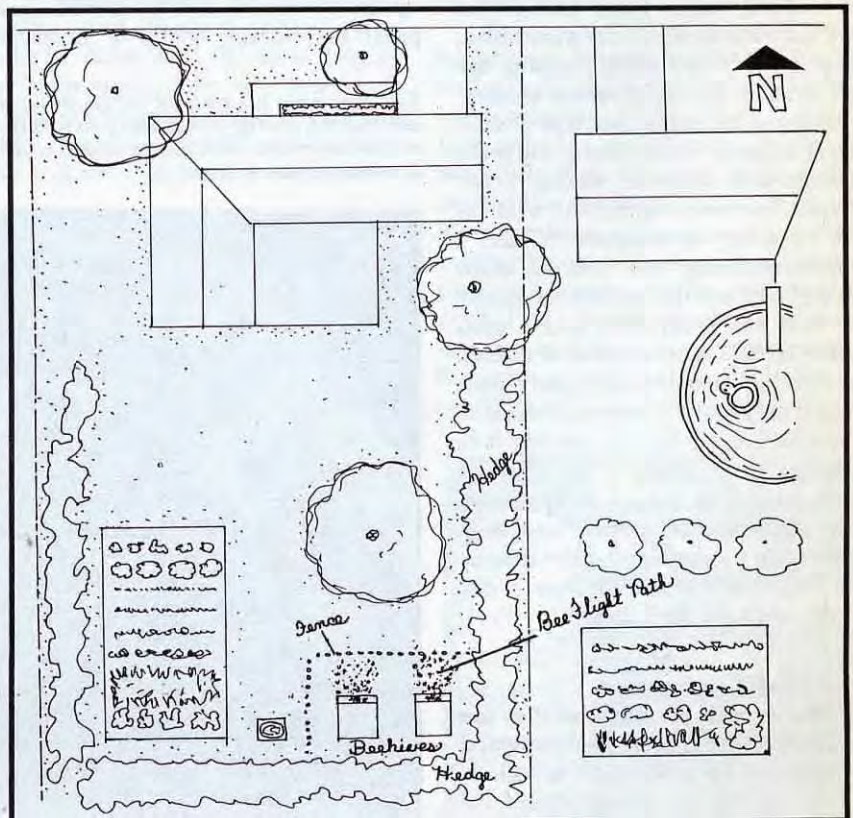
handwritten) description of the activities you perform to be a Good Neighbor. This should include your management techniques and local public relations you do to improve or maintain the image of bees and beekeeping.

That's all there is to it. Entries will be judged on adherence to standard Good Neighbor techniques, originality in solving unique problems, esthetics, practicality and success. Judges include Mr. John Root, publisher; Kim Flottum, Editor; Diana Sammataro, Equipment Edi-

tor; and Dr. James E. Tew, Extension Entomologist, ATI.

All winners will have their photos, layouts and stories published in *Gleanings*, plus receiving any cash or merchandise awards. We may redraw your lot diagram to highlight some area, or to allow for a better fit on a page.

All entries become the property of *Gleanings in Bee Culture* and none will be returned. In case of ties, duplicate prizes will be awarded. All decisions of the judges are final. All winners will be announced in the January, 1990 issue. Contest closes November 3, 1989. □



# GLEANNINGS GLOBE

SEPTEMBER 1989

ALL THE NEWS THAT FITS

## Tests Promising

# AMITRAZ KILLS MITES

WESLACO, TEXAS. "This past winter and spring, the magnitude of damage caused by the tracheal mite has been especially noticeable," said William T. Wilson, an entomologist with USDA's Agricultural Research Service and the agency's leading authority on the mite. "There's been a loss of honey, a loss of crop pollination, a loss of money — all with long-term effects for crop producers."

But Wilson said a compound called amitraz was at least 90% effective against the mites in early tests by him and colleagues of the ARS Honey Bee Research Lab here.

At present, menthol is the only approved treatment for tracheal mites. Screen packets filled with menthol crystals and inserted into hives can kill the mite during warm weather.

"Beekeepers who treated with menthol prior to the past two winters are in good condition compared to those who did not," he said. "It will not eradicate the mite but it will help keep the colony losses down."

Wilson's studies showed that amitraz, while as effective in normal temperatures, outperformed menthol at cool temperatures. And unlike menthol, it was equally effective against the Varroa mite, another major parasite of bees.

Two amitraz tests were done with 125 honey bee



BILL WILSON

colonies in Nebraska. "In both tests, amitraz gave very good control of the tracheal mite," Wilson said. "I'd say we got 90% control or better in most cases."

The chemical was tested as an aerosol and as plastic strips inserted into hives. One test ran from April to



October 1988, the other from October to April 1989.

Wilson said tests with amitraz and other controls will continue for the next two or three years. For a long-term solution, researchers are aiming at breeding mite-

resistant stocks of honey bees.

A University of Georgia study done in Mexico, where the mite is well established, showed that mite-infested colonies produced only one-eighth as much honey as healthy colonies.

In Washington state, the mite's damage to the bee industry has skyrocketed in the last three years.

In 1986, it caused colony losses of 3 to 10% among the state's beekeepers, according to James Bach, chief bee inspector with the state's Department of Agriculture. "Today, we're seeing colony losses of 10% to as high as 86%," he said. "We feel our average loss in Washington commercial bee stock is at about 40%."

He said one beekeeper who lost 600 colonies to the mite is expected to lose \$75,000 this year.

"I've talked with state inspectors around the country and they're experiencing similar losses," said Bach, who also is president of Apicary Inspectors of America. "The West and the Northeast have probably been hit the hardest. Some states report overall losses of as much as 50%."

"Beekeepers recognizing they have a mite problem are using menthol to halt the spread" Bach said. "Most are looking ahead to amitraz. It's cheaper to use, and anything that's cheaper than what we've got will be used."

## Swarm Catcher

# Missouri Beekeeper Awarded

Mr. Jim Mccaskill was recently honored as the Eastern Missouri beekeeper of the year for 1988. Jim has developed many techniques, especially capturing and uniting swarms to produce



comb honey. He goes anywhere to get them, even if he does not need them. He then discusses the benefits of bees and honey while collecting the swarm, promoting a better understanding and appreciation of the honey bee. He raised \$260 for the association in 1988 from donations made by the people who had the swarms.

## 1988 & 1989 REPAYMENT LEVELS POSTED CENTS PER POUND

Table	1988 Crop	1989 Crop
White	40.0	40.0
Extra-light Amber	37.0	37.0
Light Amber	36.0	36.0
Amber	34.0	35.0
Nontable	33.0	33.0

### Third Year Looks Great!

## Honey Board Highlights

This fall will be filled with Honey Board promotions to keep honey on the minds of consumers & retailers.

### A Honey of a Muffin

The Honey Board is joining forces with Betty Crocker Oat Bran and Wild Blueberry muffins in a national "Honey of a Muffin" insert to appear in 272 major metropolitan newspapers from coast to coast on Aug. 27, 1989.

In addition to the insert, the Honey Board's bear offer will be featured on 5 million Wild Blueberry and Oat Bran muffin packages.

### A Lifetime of Honey

Honey 30-second television ads will run on Lifetime Cable System 28 times a week for the entire month of September. The television ads will reach over 27 million consumers with the message — "Honey is Another Word for Love."

### A Breakfast Natural

To keep the momentum rolling, honey will be featured as "a natural for breakfast" this November.

The advertisement, showing a variety of simple honey uses at breakfast, includes a folding, pop-up coupon for 20¢ off any size or brand of honey. The coupons will be redeemed by the National Honey Board.

### Sweet Incentives

A special retail incentive program in 11 target markets will bring even more attention to honey. Retailers who agree to run newspaper ads for honey or build special honey displays will win "Honey I Love You" bears to send to anyone in the United States.

**Honey Graham Chex** cereal, with support from the National Honey Board, has been reformulated to double the amount of honey. To bring the consumer's attention to honey, the cereal's packaging, sales materials

and coupons will feature the Honey Board's lovable honey bear mark.

According to Ralston-Purina's Honey Graham Chex product manager Suzanne Finney, honey-added, ready-to-eat cereals account for over \$480 million in annual sales, and the honey enhanced segment is growing.

The additional honey, added to the base, results in an improved, even coating and crispier, lighter texture, Finney said. The revitalized product will be on the shelves this fall.

**The National Honey Board** has a message for the foodservice and baking industries — honey is a profitable menu addition.

To bring this message to foodservice operators and bakers, the Honey Board will be placing advertisements in the July-October issues of several major food service magazines, all stressing the theme "Just Add Honey. Make More Money."



HARRY RODENBERG

**Harry Rodenberg** was reelected as chairperson of the National Honey Board during the Board's annual meeting, June 29.

William R. Gamber II, vice president of Dutch Gold Honey, Inc., PA, was elected vice chairperson.

Dwight Stoller, beekeeper and president of W. Stoller's Honey, Inc., OH, was reelected secretary/treasurer.

Also reelected to serve on

## Maple Syrup Not Sweet This Year

Uncooperative weather and fewer taps kept sap yields lower than normal in Connecticut and other parts of New England in 1989. Producers reported their maple sap runs were way down, with production off 25% or more. Although some sugarmakers did fairly well, most reported "average" to "poor" seasons for the maple product. They reduced taps by one third to two thirds of the normal taps because pear thrips had partially or fully defoliated untold thousands of trees last year. Overall production amounted between 9,000 and 9,500 gallons of syrup. Last year, CT sugarmakers made 15,000 gallons of syrup worth about \$500,000. In a very good year, they produce as much as 21,000 gallons.

## Veggies Good for People and Honey Bees

Five daily servings of fruits and vegetables, eaten as part of a well-balanced diet, can significantly reduce your risk of heart disease and cancer. That's the message behind the California Department of Health Service's "5 a day for Better Health" program. The five-a-day habit can also help you lose weight when fruits and vegetables are substituted for other foods.

All this is good news for pollinators, as increased consumption will mean increased business.

the Honey Board's executive committee were beekeepers Richard Adey, Bruce, S; and Bruce Beekman, Turlock, CA.

### \$39 Billion in '89

## AG TRADE HELPS DEFICIT

Agricultural trade will have an \$18 billion surplus during the 1989 trade year. Dennis Henderson, agricultural economist at Ohio State University, says that's up 25% from last year and is the largest surplus since 1985. Increased exports are the reason since agricultural imports will remain about the \$21 billion of 1988. Exports will reach about \$39 billion, up more than 10% from 1988 and the most since 1982. The increase is paced by a 50% jump in the value of corn shipments. Twenty percent more corn was shipped thanks to a tripling in shipments to the Soviet Union. The value of wheat exports will be up about 30%. Up to 10% more high-value goods such as livestock, poultry and horticultural products will be shipped. This includes honey. Only soybeans show a major decline. Tight stocks and increased production outside the United States this year will cut grain exports next year. Modest growth should continue for high-value products as Asian markets continue their rapid expansion.

## IRS Looking for Withholding Delinquents

The IRS is beefing up efforts to catch companies delinquent in paying withholding taxes. Anyone caught faces fines starting at 5% of taxes owed for each month a return isn't filed. Interest on balances is also charged. In extreme cases where no withholding taxes have been paid by an employer, penalties of 100% can be applied. The IRS can also close companies down, seize assets, and hold officers personally liable for unpaid amounts.

# BUSINESS BRIEFS

## BE FAIR

Paying a female a lower salary than a male counterpart based on her prior salary history will not necessarily avoid liability for discrimination under the Equal Pay Act (EPA). You must either pay male and female employees the same wage for equal work requiring equal skill, effort, and responsibility; or prove that any difference is due to one of the four exceptions:

1. There is a seniority system.
2. There is a merit system.
3. There is a system that measures earnings by quantity or quality of production.
4. The difference is based on factors other than gender.

## NEWSLETTERS WORK

Build better customer relationships and improve chances of landing a new prospect by distributing a free client newsletter. In the newsletter, discuss the latest company and industry developments. Use your current customer and inquiry lists as mailing lists. Obtain additional leads from dealers and distributors to expand your subscription list. Providing valuable information to clients and prospects improves your image — and your sales.

## MARKETING PROBLEMS?

The following are signs that your company has marketing problems, according to John R. Graham, pres. of John R. Graham, Inc., a public relations, advertising, and marketing firm in Quincy, MA:

- Price reductions are commonly used to keep customers
- Gimmicks are frequent
- There are constant changes in sales strategies
- A vast majority of leads come from the sales staff
- Customers lack knowledge about the full line of company products and services
- Sales staff use inadequate or incomplete mailing list

## FINANCING AVAILABLE

Looking for a source of equity or debt financing for venture or risk investments? Consider Small Business Investment Companies (SBICs). These privately capitalized corporations get financial leverage from the SBA. In 1988 they invested a record \$614.5 million in small businesses, a 15% increase over 1987, according to the SBA's investment division. Of SBIC dollars:

- \$245.6 million went to equity financing
- \$216.5 million went to loans
- \$152.2 million went to combination debt/equity investments

For more information contact the National Association of Small Business Investment Companies, 1156 15th Street, N.W., Suite 1101, Washington, DC 20005 (202-833-8230).

## Export Help

The Bush administration has come to the rescue of the Export-Import Bank's direct loan program. Eximbank

stopped making loans in January this year, after it was singled out for budget cuts by the Reagan administration. However, President Bush has allocated \$720 million to Eximbank for fiscal year 1990, and

## ORIENTAL WISDOM

# HOW TO SELL IN JAPAN

•**No. 1. Make no compromise with quality.** The Japanese see right through puffery.

•**No. 2. Recognize the limitations and constraints of language.** There is a lack of wordplay, such as alliteration, in Japanese so visuals become very important and copy somewhat less so. Nevertheless, be painstakingly careful with copy. Have it translated and back-translated until you are satisfied. Do not delegate creative decisions.

•**No. 3. Look beyond the obvious in Japanese society.** All Japanese are not the same. As consumers, women are extremely important economically.

•**No. 4. Be competitive and stay competitive.** Monitor your competitors carefully. But when reacting to them, remember that aggressive pricing is often not the best solution. And, do not rely on the legal process to redress grievances.

•**No. 5. There are no fast bucks to be made. Plan for the long haul.** Plan with a minimum three-year horizon, five would be better.

Do not underestimate start-up costs.

•**No. 6. Where possible, adopt Japanese management practices.** Avoid a top-down management style. "Face" is a very real issue. Recognize the importance of harmony. Avoid confrontation at all levels. Accept that decisions will be slow, but implementation fast.

•**No. 7. Trust your instincts.** Do not confuse good English with ability. When the Japanese say "Yes," they often mean "Yes, I understand," not "Yes, I agree".

•**No. 8. Benefit from the experience of others.** The isolated nature of the Western business community in Japan promotes camaraderie. Use it! Build and maintain contacts in the foreign and Japanese communities, as well.

•**No. 9. Tradition is important.** Accept that Japanese society is conformist in the main.

•**No. 10. Staying on top means staying in shape.** Do not attempt to rest on your laurels.

## TAX TIPS

IRS Revenue Agents offer the following suggestions to make tax time easier, and enable you to live through an audit especially if you are only a hobbyist.

- Have a separate checking account. This will ease tracking income and expense records, especially if you puts lots of information in the check register.
- Practice basic, simple bookkeeping. Use farm and ranch forms, record-

ing cash receipts and spending. This will also give you a profile of the business, rather than a specific window.

- If you have more than one business, keep their records separate.
- Track all expenses and invoices. Don't throw all 'paper' in a shoebox and expect to know what's happening. Develop a filing system with alpha or date oriented.
- Learn depreciation accounting to both save money and time at filing season.

## FEDERAL TAX ASSISTANCE

Available to you (TOLL FREE)  
1-800-424-3676 (Forms Only)  
Tax & Current Refund Info.  
1-800-554-4477 (Recorded)  
Tax Information & Notices  
1-800-424-1040

## ABF NEWS

Laura Wingard, a 13-year-old from Kittanning, PA, was judged the best essayist in the American Beekeeping Federation's 4-H Essay Contest for 1989.

Writing on the topic of "Honey Bees and Your Health", Laura addressed: use of honey by athletes for quick energy, pollination of vegetables, and honey as a medicinal agent. From her experience as a watcher of her uncle's beehives, she made this observation about beekeeping: "I believe one of the chief benefits of honey bees is the positive feeling generated by an appreciation for watching the bees themselves as they work, whether in the fields or around our own beehive. Health is closely tied in because you feel better, and are, on the whole, healthier, when you are happy and intrigued, as when you are watching bees."

Laura is the daughter of Dr. Larry and Karen Wingard and lives on "a sheep farm with 35 ewes and beehives". Laura receives a cash

award of \$250.00.

Second place essayist, Joey Vandendriessche of Garvin, MN, wins a cash prize of \$100.00. Joey concluded his essay with this passage: "Bees help keep nature in balance and give me hours of enjoyment. No wonder the taste of honey is so sweet. It is the taste of life!"

An apparition from an archaeology dig helped the third place writer win \$50.00. The "Ghost of Mr. Honeycomb" pointed out across a desert and told Lucinda Pickett of Coughatta, LA: "Once many years ago, this was a lush orchard of almond, apple, cherry, pear and peach trees".

Essays were submitted by 27 states. Each state winner receives a copy of "Beekeeping Questions and Answers".

For the 1990 essay, 4-H'ers are asked to consider the special relationship between honey bees and mankind through the ages and cover as many aspects of the relationship as they can. Rules for the contest have been sent to all state 4-H offices and should be available from local 4-H workers.

## SHOWTIME!

It is time to begin preparing for the 1990 American Honey Show, says show chairman Rick Sutton.

The show is a feature of the American Beekeeping Federation's annual convention which is set for Jan. 15-19, at the Riviera Hotel in Las Vegas.

According to chairman Troy Fore, topics and speakers are being selected, exhibitors are being contacted for the Trade Show, arrangements for the activities connected with the American Honey Queen are being made, and tours to attractions around Las Vegas are being booked.

"The concurrent workshops which proved so popular last year will be part of the program again in Las Vegas," Mr. Fore says. "We are using this technique to

pack more information and opportunities into the program."

After the show, entries will be auctioned with proceeds going to benefit the American Honey Queen program.

For Honey Show entry forms and rules or information, contact the American Beekeeping Federation, P. O. Box 1038, Jesup, GA 31545, (912-427-8447).

## Budget the Best Expert Witness Worth the Price

The testimony of an expert witness can mean the difference between winning or losing a major lawsuit. Expert witnesses can:

- provide exhibits to support your argument

## COPIES AVAILABLE

# Rhode Island Gets New Apiary Law

Beekeeper/Attorney Michael D. Mitchell, Providence, RI, reports that effective July 10, 1989, beekeepers in RI are subject to a new "Apiculture Law". The law supplants the prior bee law in its entirety. The old law was on the books since 1936 without major revision, and was itself codification of an earlier (1910) statute. Passage of this comprehensive legislation is in keeping with the national trend by state governments to modernize their antiquated apiary laws.

Mitchell reports that the Executive Committee members were highly motivated individuals who committed long hours to the task of learning the legislative process, discussing the various issues and, of course, editing, editing, editing. Special recognition goes to RIBA President Bill Hays for his perseverance and to Charles McKellar for his word processing skills.

The RIBA legislative project achieved several important goals. First was the establishment of a grass roots legislative effort within the local beekeepers' organization. Another beneficial aspect of the project was recognition by the General Assembly of beekeeping as a

vital agricultural and environmental asset. The project thus opened lines of communication between RIBA and elected officials. These contacts will be useful in preventing restrictive emergency legislation, at both the state and local levels in future years.

Highlights of the RI Apiculture Law include:

- ...Abolition of the unconstitutional warrantless inspection provision contained in the old law.
- ...A definition section which clearly defines beekeeping terms, thereby reducing ambiguities in interpretation and enforcement.
- ...Guidelines are set for the qualifications of persons serving as state apiary inspectors, including limitations upon the number of colonies an inspector may own.
- ...Establishment of an advisory board to consult with regulatory officials regarding matters relating to honey bees.

Copies of the Rhode Island Apiculture Law may be obtained without charge, by written request to: Michael D. Mitchell, Esquire, Adler Pollock & Sheehan, Incorporated, 2300 Hospital Trust Tower, Providence, RI 02903.

TO HAVE NEWS RELEASES PUBLISHED IN EITHER THE GLOBE OR THE CALENDAR, INFORMATION MUST BE RECEIVED ONE MONTH PRIOR TO PUBLICATION ISSUE DATE.

- analyze documents; and anticipate documents the other side possesses, so your attorneys can request them
- refute an opposing expert's testimony
- assist in deposing other experts
- find experts in related areas

When selecting expert witnesses, ask for referrals from your attorney, account-

ant, or other business associates. Consider consultants, college professors, or noted authors of books or articles.

Find out how the expert performs on the witness stand and if the testimony proves valuable. Review the expert's past testimonies and published works to ensure consistency in his or her viewpoint. Also, make sure there are no conflicts of interest.

Opens Sept. 14

## L. A. FAIR

For more than 40 years, the L. A. County Fair has sponsored a Bees and Honey exhibit that has offered beekeepers the opportunity to display their work and compete with other beekeepers.

The Bees and Honey exhibit features the bees and hives of both individual beekeepers and organizations. The bees are then entered into competition, and the bees and overall appearance of the exhibit are judged. In addition, awards are given for honey, honey comb, pollen and mead by judges from the bee industry who buy and sell honey as a business.

New to this year's competition are the pollen and mead divisions. Pollen will be judged on granule uniformity, cleanliness, taste and aroma. The mead will be judged on clarity, bouquet, taste, body and color.

Fairgoers can view the Bees and Honey exhibit in the Agricultural Pavilion. The world's largest county fair runs from Sept. 14 to Oct. 1.

## OBITUARIES

On April 16, **PHIL GLASER**, a beekeeper for over 60 years and a Pennsylvania Bee Inspector for many of those years, passed away while tending his hives. Phil, at age 73, had maintained over 50 bee hives throughout Butler and other counties. He also taught beekeeping classes and was a distributor of bee supplies. Phil retired from Shaler Area School District in 1976 after serving as principal and administrator. He is survived by his wife of 37 years, Regina, a son, Paul, and two grandchildren.

**CARL HENRY KALTHOFF**, 80, of Lexington, died June 20th at Lafayette Regional Health Center,

## MAGAZINE LATE?

WASHINGTON, D.C. Second class mail delivery has taken a big drop for semi-monthly and monthly publications according to figures newly released from the Association of Business Publishers (ABP).

Although the ABP has been monitoring postal delivery for three years, the organization is only now releasing the figures, which show a bad situation getting worse.

On-time delivery for semi-monthlies, by USPS standards, was down from 24.5% in January-March to 16% in March, and dropped from 23% to 15% for monthlies. This means that 85% of monthly magazines are not being delivered on time.

Good Weather Helped

## Delaware Valley Course Success, More Planned

Delaware Valley College's three day Summer Beekeeping Short Course was favored by two days of balmy weather that allowed the class to spend much time in the bee yard and at the College's Bee House.

Attendance for the course was up over last year which may indicate a resurgence in interest in beekeeping. The course featured many different aspects of beekeeping. In addition to many illustrated classroom discussions, numerous hands-on demonstrations were carried out in the college's bee yard and honey house. Included in the field portion of the course were management tech-

niques, brood inspection, bee removal from honey supers, honey extraction, and many uses of beeswax including candle making.

The instructors: Jack Matthenius, Gary Bradshaw and Dr. Bob Berthold, are looking forward to next year's program. In addition to their "regular" short course on three Saturdays in the spring, they are also considering an advanced course during the summer. Anyone interested in additional information on next year's courses should write to "Bees", Delaware Valley College, Doylestown, PA 18901-2699 or call (215) 345-1500.

## FEDERATION SUPPORT

The American Beekeeping Federation has urged key Congressional leaders to continue the current Honey Loan and Price Support Program in any extension or revision of the 1985 Farm Bill — with an increase in the support rate.

In letter to the chairmen of the Senate and House agriculture committees, Federation Secretary Troy Fore commended Rep. E (Kika) de la Garza and Sen. Patrick Leahy for their past help in preserving the support pro-

gram, "which is vital to the well-being of both honey production and pollination services in this country."

Under the terms of the 1985 Farm Bill and subsequent appropriations limitations, the honey support rate will have dropped over 18% from the 1985-crop level to the 1990-crop level, Mr. Fore told the Congressional leaders. "An improvement of this rate is necessary to maintain the economic viability of the industry", he said.

Since the 1985 Farm Bill set the rate to "ratchet down" each year, he wrote, "we have had to face two serious pests, honey bee tracheal mites and varroa mites, which could add as much as \$10 to \$12 per colony to operating costs, an amount roughly equivalent to 20 lbs. of honey per colony. And ahead of us we have the arrival of the Africanized bee, which is certain to further increase our operating costs."

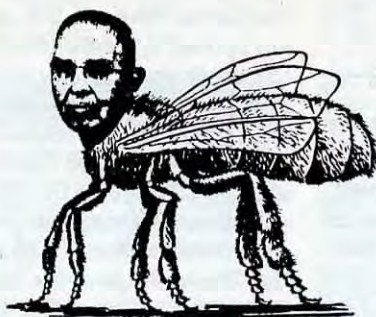
The Federation Legislative Committee, chaired by

ABF Vice President Bob Brandi, expects to work closely with the House and Senate agriculture committee staffs over the coming months to work out an equitable honey support level for the new farm legislation. Other committee members are ABF President Reg Wilbanks, Past President Randall Johnson, Secretary Fore, Dick Ruby, Don Schmidt, and Binford Weaver.

"Compared to other commodities, honey took more than its share of cuts," said Brandi. "We need to recoup some of these losses to help our honey producers be more profitable. Other than the declining loan rate, however, we have been very pleased with how well the honey program has been working.

"We would appreciate any help producers could give the Legislative Committee in this effort," Mr. Brandi said. "When you have any opportunity to be in contact with your Congressmen, let them know that you are pleased with the program and would like it continued."





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