Bee Culture

DEC 1997

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

December 1997 VOLUME 125 NUMBER 12

FEATURES

COVER

"The Path To Spring," "The Road Not Taken," or "Snowy Day," were all thoughts for the title of this photo, and this month's cover. All work I guess.

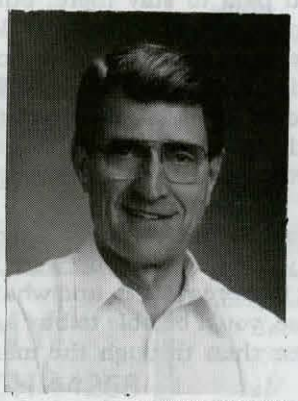
Actually, this is a path to one of my beeyards, in a clearing in a woods not far from home. Jim Tew's article on Package Bees next Spring, and Dick Bonney's thoughts on Winter Activities both come to mind.

But best, perhaps, is the quick stroll for a short inspection, and the snowy, quiet walk home.

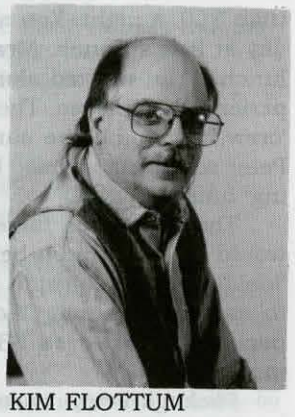
photo by Kim Flottum

DEPARTMENTS

COLUMNS



JOHN ROOT
Publisher



KIM FLOTTUM
Editor

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INNER COVER

Package Pete

Imagine the following.

Marty Smith, a hobby beekeeper with a dozen or so colonies lives somewhere in the northeast and decides to expand a bit, and also to replace a couple of colonies lost early last Fall. He makes a few calls, looking for local nucs but none are available. What to do? What to do?

He takes a look in the latest *Bee Culture* and calls a few package suppliers in the south, checking on availability and prices. There's lots of bees, but the price . . . well the price, including that new special handling postage . . . the price was more than Smith thought reasonable. More, he thought, than the bees were worth.

But one of those suppliers had made him an offer he found interesting, so Smith called him back.

"Tell me again," said Smith, "What is this deal you've got if I come down and pick up my bees?"

"Sure," said Package Pete, the queen and package producer whose operation is in southeast Georgia, "I'll send ya all the brochures and you can take a look. But you gotta hurry 'cause I book up fast, and I'm pretty much sold out from May to October, by the middle of December. Now, give me your address . . ."

The brochures arrived a couple days later and Smith pored over them. Here's what Pete had to offer.

For a fee, a fairly substantial fee, Smith and a friend could go down to Pete's Bee Ranch for one night, three nights or a week, and help Pete and his crew shake bees, pick queens, prepare packages and all the rest. Depending on the time they stayed, Smith and his companion could get just his packages ready or work along with the crew getting others ready.

There were other packages available. There was the real early Spring package where you spent time raising queens; the early Spring package, for the queen and package season; the late Spring package for pollination (Package Pete moved a lot of bees every year for several crops); and there was the honey harvest and extraction package (Pete made *alot* of honey every year and extracted and barreled most of it); there was also the late season package that put you on Pete's trucks making sales runs to grocery stores, warehouses, farmer's markets and packers; and finally, there was the maintenance package, where you spent time fixing supers, trucks, lifts, feeders and anything else. (No wonder he was called Package Pete).

Pete ran, in case you haven't figured it out, a Dude Ranch for beekeepers. He'd taken over a small hotel in town and turned it into a Bed & Breakfast. You paid to stay there, but it was less than $50. a night. You also paid, handsomely, to work six hours a day at Pete's Ranch. Meals were on your own or you could get box lunchs. You worked alongside, and under the guidance of, an experienced employee. There could be as many as six others in your 'crew,' all doing the same thing – paying Pete to help him out. Peter could run, if need be, two crews. That's a dozen people 'helping' him out.

The brochures talked about what a learning experience this would be, how much better you'd be when you were finished, the 'inside' look you'd get at how the 'pros' did it, and what a great way to spend a vacation. Of course, you'd be able to buy a three pound package for an even $30 *less* than through the mail, discounts included.

Package Pete, it seems, was one step ahead of the rest, and had got his operation going sooner than anybody else. And he was making money. Lots of money. He was, as he said, booked solid (12 at a time) nearly all year. No matter what the task there were people standing in line to get a chance to pay to work for Pete.

Forklifts, swingers, 80-frame extractors, Cowen uncappers, semi's full of colonies, all-night drives to cantaloupe fields, feeding hundreds of bee yards, sticking a thousand queens, hauling packages to the Post Office or another beekeeper, listening to negotiations with packers, replacing crystallized honey on grocery store shelves, recording barrel lots for delivery . . . the brochure was enough to make every beekeeper good enough to know which end of a smoker to use, drool. Smith bit. Big time. This was something small guys only get to dream about and Pete knew it. And had made, well not quite a fortune, but almost, cashing in on his idea.

Pete had had to make some changes in his business to get his dude ranch going. The Bed & Breakfast was an off-season project, and hiring extra people to run the Dude part of the operation had been a real challenge, labor being what it is now-a-days. But after a slow start and a couple of rocky seasons Pete had the kinks out and was sending out brochures, advertising in not only bee trade magazines, but other ag, and some exclusive magazines, and, well, was doing just fine.

Now, quit imagining this. Who will be the first to make a Bee Dude Ranch a reality? And when you do, you need to invite me down for a few days to, you know, review the place, and let people know how great it really is.

Kim Flottum

Reader Assistance

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Bee Culture

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Publisher ..... **John Root**

Associate Publisher ..... **Robert Stanners**

Editor ..... **Kim Flottum**

Production Coordinator ..... **Kathy Summers**

Circulation & Advertising ..... **Dawn Feagan**

Publications Assistant ..... **Mary Weigley**

Contributors ..... **Richard Bonney**
Roger Morse
Richard Taylor
Mark Winston
Clarence Collison
Ann Harman
B.A. Stringer
James E. Tew

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MAILBOX

Poor Choice

We went out to photograph this colony of bees with your magazine in mind.

'A Spring swarm in the Ozarks, near Ash Grove, Missouri, has made a poor choice of location to survive the Winter.' These bees are about 30 feet up in an oak tree, and started building inside the hollow of a broken limb. Obviously there wasn't as much space in there as they needed, so they moved outside.

Craig Highbarger
Fair Grove, MO

Label Error?

Alan Harman writing in *Bee Culture* July 1997 under the title "British Honey Label Warning" has got himself in a terrible muddle.

The warning label on honey packed by members of the British Honey Importers and packers Association only refers to infant botulism and not possible mutant pollen content. The label states that honey should not be fed to babies under 12 months old and refers only to Botulism. This has been confirmed to me by Laurie Keys who is the Chairman of the Honey Importers and Packers Association.

There is some concern in Britain that pollen from genetically modified plants (GMOs) may end up in honey. A number of scaremongering articles have appeared in newspapers and magazines in England stating this as fact. However, at the present time researchers in England and elsewhere in Europe have not found evidence of this but the research is still in progress.

A.P. Dalby
Chairman, British Beekeepers' Assn. Technical Committee

Tiny Treasures

As many of you know last Summer Jarel, Texas was totally devastated by a tornado. The raging winds completely destroyed homes leaving only concrete slabs. Paved roads were pealed back revealing the earth.

A group of Mennonites were volunteering their time and energy to rebuild homes and lend aid to those in need. I was compelled to visit these fine folks. While there I met Jacob Hershberger, a pine-apple farmer from Costa Rice. After revealing my interest in bees and my desire to learn German, Jacob killed two birds with one stone by teaching me this rhyme.

Flipsig ist die kleine biene
Im hellen sonnenschein.
Sie fliegt auf blumen her und hin.
Und sammelt honig ein.

Buzzy is the little bee
In the bright sunshine.
It flies to flowers here and there
And collects honey all the time.

Tiny treasures are found in the most unlikely places. For this I am grateful.

Kim Lehman
Austin, Texas

Another Richard

Very much enjoyed Richard Taylor's article in the October 1997 issue. The sections of the column such as the "the connection between science and beekeeping," "Someone can be a first-rate beekeeper" and "scientists tremble at the thought" are quite profound. Mr. Taylor is a master of common sense and reason. Can we clone him?

Brad Booth
Pleasant Garden, NC

Gimmick Marketing

At a recent agricultural fair where we were selling our honey products, a prospective customer asked us (quite seriously), "Is honey bee poop or bee vomit?"

At two recent bee gatherings, one Master Beekeeper told his audience that honey is bee vomit. Then he stood back and chuckled at the audience reaction. At another gathering, the president of the beekeeping club said that he would market his honey by labeling it "Bee Vomit." He was quite serious. Is this indicative of a disturbing new trend? We certainly hope not! It has always been our contention that nectar enters the honey stomach but that a one way valve prevents it from entering the digestional tract.

The honey industry has worked extremely hard to promote honey as pure and natural. When the fad of this type "gimmick" marketing has died, the honey industry and the beekeeper will have a difficult time repairing the damage. We hope all those involved in the honey industry will help to discourage these people.

Ted and Bev Stanier
Conway, NH

Ventilator Questions

I am writing in regard to the article in the September 1997 issue of *Bee Culture*, "A Hobby

Continued on Next Page

MAILBOX

Beekeeper Evaluates the Solar Powered Hive Ventilator." I have several concerns with the article.

The extremely small sample size as was mentioned in the editor's comments makes it difficult to determine if we can be confident in a practice or product. Researchers spend a great deal of time to try to reduce natural variation in a study through replication of numbers, time and in randomization.

One variation would be time of nectar flows. What were the precise time periods of nectar flows? My limited experience indicates that nectar flows in my area can vary from a few days to weeks from year to year. How do we know that nectar flows occurred during this study when the ventilator was on and a dearth occurred at least once when they were off?

The bottom line is did this product actually increase honey production? In Arkansas, with a state average of 60 pounds honey per hive it would take eight years or more to return the initial cost of the solar hive ventilator. This assumes receiving $1.00 per pound for honey.

If a major university study proves a 33% increase as indicated in an advertisement why not list the name of the university and their unbiased data?

Steve Culp,
Jonesboro, AR

Quality and Price

During a recent weekend I was browsing at an antique market and I saw an empty five pound honey can. I live in Eastern Pennsylvania and we only see honey in jars. I worked in a supermarket in high school and never saw honey in cans. The can was labeled "Empress" clover honey from the Intermountain States. It was packed for Safeway Foods. I am not sure but I think I may have seen this on the store shelves in the western U.S., probably in Phoenix or Salt Lake City. Anyway, what impressed me was that the original price was still on the bottom of the can: $1.29. I thought that this can must be very old. On second thought, honey may have been selling that cheap as little as 20 years ago.

This got me thinking about honey prices. Ten years ago when I sold my first jars of honey I was told by one customer that my prices were much lower than the supermarket. I thought it was supposed to be that way. After all, this was a hobby and I was just off-setting the costs. How wrong I was, and I don't have that problem anymore. Just because you enjoy doing the job the final product doesn't lose value. Selling any product at a lower price than it is worth does a disservice to the industry. I argue this point with a number of beekeeper friends. Some of them sell their honey much lower than I do. Although many have more colonies and produce more honey than I do, they often say that they are not making much money. To make matters worse, in a low production

MAILBOX

year when some beekeepers may have to buy additional honey to keep customers, the profit is even lower and in the end they only earn a few pennies on a pound. This may happen in spite of the fact that their wholesale honey is being marked up $1.75 or more per pound by the retailer.

I sell my honey to health food stores and at a farmers market. I get the highest "fair" price I can. If someone comments (and this seldom happens) that my honey is more expensive than at the supermarket, I tell them they are absolutely right. But they won't be able to buy MY honey at the supermarket. I go on to tell them why my honey is better. I tell them that the quality of my honey is as good as or better than any other honey on the market. If beekeepers can't make this claim about their honey, then they should ask themselves WHY NOT? The price tag sends a message: Quality. We as consumers are accustomed to paying a little more for a better product. In fact some consumers associate a higher price with quality. This argument will only work if you are producing quality product in the first place. The market will decide that. The consumer always has choice whether or not to buy.

I guess I have said enough, its time to get down off the box. I probably stepped on a few toes but remember its just my opinion. You are probably wondering what I consider a "fair" price. I charge $3.25 retail and $2.00 wholesale for a one pound jar. Price comes down as container size goes up, but it never goes below $1.20 per pound. I produce between two and three thousand pounds per year. Its what I do and it works for me.

If anyone has any information on Empress honey, let me know. I did pay a few dollars for the empty can and I am curious.

Ron Bogansky
237 Rhodes Rd.
Kutztown, PA 19530

Cover Kudos

Great photo by Gard Otis on the August issue cover! Way to go!

Cliff Van Eaton

Lowtech Email

O.K. O.K. I'm sending email to say how much I enjoyed Howard Scott's article, "The Joy of Lowtech," September, 1997. He expressed my sentiments right down to my hard drive.

W. Rustin

TM Patties

You summarized Terramycin recipes on page 33 of the October, 1997 issue of *Bee Culture*. In it you made the point that bees sometimes will not consume patties at a satisfactory rate.

Garry Libby revealed the solution to that problem (*American Bee Journal*, April 1996, p. 279), accomplished by adding honey to the patties. I can confirm that they scarf up the patties with honey at a great rate. I think I am seeing a

MAILBOX

slower rate of consumption when Terramycin is added. (I keep patties in my hives 12 months out of the year after Sammataro (April, 1996, *ABJ*, p. 279) but include TM only when no extracting supers are installed.)

Rather than making the mess of measuring Crisco by volume, small quantities can be measured by starting with a new one-pound can. Quarter the shortening with a dinner knife and then dig out one sector to one half depth to make a 1/8 pound quantity. To this I add approximately two tablespoons of honey. (I'll let you work out the amount of sugar – I use powdered – and TM to be consistent with your recipe.) As I said, next time I'm going to use twice that amount of honey when TM is included.

I have one tiny complaint about your article. Your recipe of one 6.5 package in one pound of shortening plus three pounds of sugar, four pounds total, making 12 patties produce 1/3 pound patties. Contrast this with the heading (in blue ink): "one quarter-pound patty per colony." So how much does the patty made with four teaspoons TM weigh? It really doesn't matter but it is a nuisance when one is trying to make comparisons.

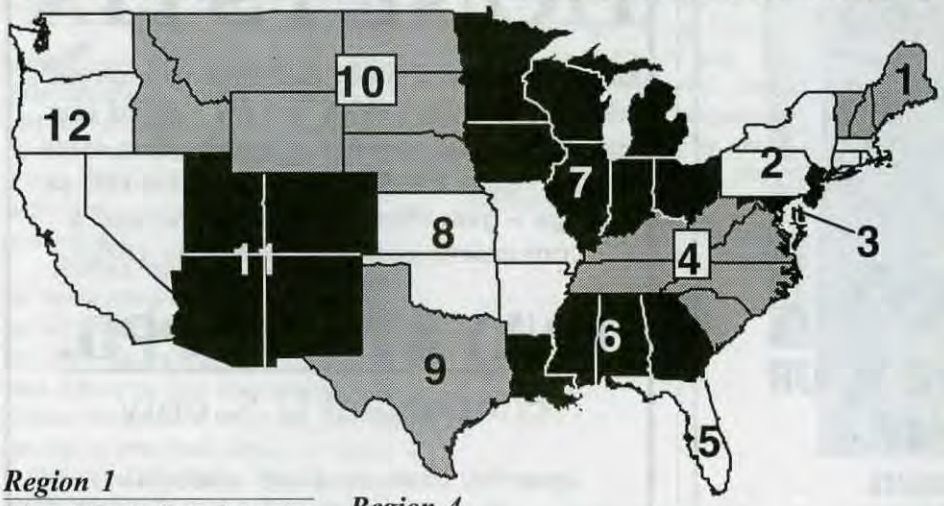
Dan Hendricks
Mercer Island, WA

Never Too Young

This is a photograph of my grandson, Ertug Emin. He is 2½ years old and likes to see bees and play with *Bee Culture* magazines bound by myself. The small one is 1967 edition of *Bee Culture*.

Fahri Veziroglu
Mersin, Turkey

DECEMBER – REGIONAL HONEY PRICE REPORT



Region 1

Prices only steady to decreasing for most items. Retail and wholesale sales steady to increasing but bulk prices dropping to mid-seventies. Most reporters retail direct or wholesale, with only a few selling bulk.

Region 2

Prices steady to declining, especially in bulk. Sales steady to increasing especially at retail level. Bulk sales slowing due to declining prices. Wholesale and bulk sales are most often reported, but direct retail handled by most reporters to some degree.

Region 3

Prices and sales steady to dropping, especially noticeable at retail. Little bulk sales in this region. Reports indicate both prices and sales increasing, but figures dispute this.

Region 4

Wholesale sales increasing a bit, but prices only steady, while retail sales are doing the same. Retail and wholesale sales predominate in this region, while bulk tends to include far fewer individuals. Many tend to buy from smaller beekeepers and resell.

Region 5

Wholesale and bulk prices steady to down a bit, but specialty bulk holding on, for some sellers. Retail steady, even gaining a bit. Most reporters wholesale, or sell bulk direct, and many buy and resell.

Region 6

Bulk prices up in pails, down in drums. Wholesale case prices up, and retail prices up. Lots of direct retail reporters in this region, but larger producers report price increases are showing up.

Region 7

Bulk prices in pails and drums down this month, and sales only steady to down also. Wholesale prices steady and sales reported down. Retail prices also down, and sales down also. Most reporters retail direct or wholesale.

Region 8

Bulk prices in pails up to steady, but drum prices down, quite a bit. Wholesale prices, too are down but retail prices fairly steady. Both retail and wholesale sales increasing however.

Region 9

Both wholesale and retail prices fairly stable, but down just a bit. Large lots still low and buyers are scarce we're told. Sales, however, at retail and wholesale increasing.

Region 10

Prices steady, but some up, some down. Sales mixed across state, but retail strong, wholesale stable and bulk down (some report nonexistant).

Region 11

Prices, and sales steady, but holiday spurts showing up here and there. Retail prices dropping a bit in some places.

Region 12

Sales and prices for pails and drums down, wholesale steady, but retail sales up, but prices down. Seasonal demand picking up.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12			Last	Last
Extracted honey sold bulk to Packers or Processors													Range	Avg.	Month	Yr.
Wholesale Bulk																
60# Light	65.51	71.00	66.57	74.00	54.00	59.00	62.56	81.69	54.00	69.00	75.00	67.50	46.80-85.00	67.91	69.01	68.44
60# Amber	62.18	67.19	68.69	68.99	54.00	61.50	57.30	60.50	52.00	63.00	60.00	60.00	43.20-99.00	63.88	64.84	67.07
55 gal. Light	0.87	0.91	0.90	0.88	0.84	0.91	0.85	0.90	0.88	0.90	0.89	0.85	0.78-1.25	0.85	0.92	0.96
55 gal. Amber	0.83	0.88	0.82	0.84	0.79	0.89	0.80	0.85	0.85	0.82	0.85	0.82	0.65-1.25	0.81	0.86	0.91
Wholesale - Case Lots																
1/2# 24's	28.51	30.58	29.63	33.35	23.60	36.00	25.62	29.63	30.00	29.63	29.63	29.63	22.80-36.00	30.08	30.79	29.67
1# 24's	42.42	39.79	45.28	44.98	41.00	42.49	40.67	40.92	49.00	44.00	60.00	49.20	32.40-60.00	43.44	43.10	40.90
2# 12's	39.01	36.12	42.78	42.99	36.85	37.80	40.42	40.00	41.00	41.00	42.78	39.00	29.40-59.00	39.93	40.23	38.43
12 oz. Plas. 24's	36.51	36.08	39.25	37.47	36.00	35.86	34.89	32.88	42.00	40.80	54.00	37.80	26.40-54.00	37.36	36.59	35.64
5# 6's	40.71	45.23	44.46	45.50	39.00	40.54	36.34	41.50	46.00	41.25	44.46	44.46	24.00-67.50	41.89	40.59	40.50
Retail Honey Prices																
1/2#	1.82	1.70	2.20	2.17	1.25	1.56	1.45	1.68	1.95	2.20	2.50	2.20	1.05-3.69	1.85	1.89	1.79
12 oz. Plastic	2.17	2.15	2.19	2.39	2.25	2.06	1.93	2.28	2.95	2.25	2.95	2.27	1.35-2.99	2.22	2.26	2.19
1 lb. Glass	2.57	2.50	2.85	2.83	2.30	2.59	2.25	2.66	3.50	2.36	2.95	3.00	1.99-3.95	2.61	2.71	2.58
2 lb. Glass	4.23	4.29	4.54	4.87	3.88	4.24	3.87	4.21	4.75	4.62	4.54	4.65	3.29-5.99	4.33	4.48	4.38
3 lb. Glass	5.81	6.60	6.31	6.92	5.15	6.18	4.84	5.61	6.25	5.49	6.95	5.79	4.25-8.69	5.99	6.19	5.77
4 lb. Glass	7.75	6.50	8.60	8.55	7.50	6.53	8.67	9.29	7.50	8.50	8.60	8.60	6.00-11.69	8.12	7.95	7.28
5 lb. Glass	8.93	9.44	10.37	9.90	8.50	7.70	8.52	9.12	10.00	8.46	8.95	10.37	7.00-14.99	9.11	9.20	9.27
1# Cream	3.18	3.42	3.75	3.64	3.75	3.03	2.43	3.28	5.75	2.52	3.95	3.40	2.25-5.75	3.24	3.30	3.06
1# Comb	3.87	4.19	4.17	4.02	4.17	4.00	3.79	3.50	5.00	4.17	4.17	4.00	2.50-6.00	4.01	4.31	4.05
Round Plastic	3.55	3.15	3.90	3.72	3.90	4.00	2.65	3.99	4.10	3.90	6.00	3.90	2.00-6.00	3.71	3.83	3.82
Wax (Light)	2.92	3.54	2.00	1.96	2.10	4.05	2.25	2.50	4.00	4.04	2.50	3.38	1.70-7.50	2.91	2.82	2.86
Wax (Dark)	2.39	3.33	3.05	1.61	1.75	2.38	1.87	3.05	3.75	3.05	1.75	2.50	1.25-5.50	2.41	2.41	2.67
Poll. Fee/Col.	34.83	38.00	25.00	36.67	27.50	37.50	39.00	36.99	15.00	36.99	36.99	31.50	15.00-60.00	35.96	36.35	33.96

Guest Editorial

REMARKABLY HEALTHY

Tom Theobald

Pesticides continue to cause problems for beekeepers. But others are suffering, too.

Reports coming in from around the country indicate that the U.S. honey crop will be down significantly in 1997, so I'm not alone in my expectations of a short crop. A recent survey by the Mid U.S. Honey Producers Marketing Association covering eight states in the "Honey Pot" of the United States (Montana, North and South Dakota, Wyoming, Nebraska, Kansas, Minnesota, and Wisconsin) indicates that the 1997 crop will be about 75 percent of normal. Colorado beekeepers have been predicting a reduced crop since mid-Summer, and for some – particularly those who rely on native prairie flora more than on sources from irrigated agriculture – the crop could be very small.

While a short crop never comes at a good time, reduced production in 1997 may bring difficult times to many commercial beekeepers who have been struggling to regain their numbers after several years of high colony losses.

In some parts of Colorado, beekeepers continue to see excessive losses to pesticides, and while in the past they absorbed this damage with surprisingly little complaint, the losses being experienced from mites, coupled with the expense of treatment, make these additional losses intolerable. The margin in beekeeping was slim before the advent of the mites, and operations which are teetering on the brink may go under from the combined effect of mites, pesticides, a short crop and borrowed money.

The Colorado Department of Agriculture has begun to bristle at the continuing concerns being expressed by Colorado beekeepers over pesticide losses. They seem unwilling to recognize the gravity of the situation, preferring to explain away those concerns with a variety of rationalizations. Mites are a primary dust bin. In July, a state inspector arrived at a beeyard in southeastern Colorado, and upon stepping from the truck and observing piles of recently killed bees in front of each hive, asked the beekeeper, "Do you think it could be mites?" That one beekeeper alone lost 700 colonies to spray damage. Pesticide kills are obvious, and his question was a little like asking a rancher whose steer has just been splattered by a Peterbuilt if the animal might have died from old age or hoof-and-mouth disease.

In a recent newspaper article it was reported that ". . . even though the number of hives in Colorado plunged by a third last year, the honey business is remarkably healthy. . . . Despite the bee kills, Colorado honey production barely dropped between 1995 and 1996."

While the reporter didn't indicate the source of his observations, it's likely he was being fed these rationalizations by bureaucrats in the Department of Agriculture. What was overlooked and not reported is the fact that 1995 was a certified disaster year for commercial beekeepers in the state, while 1996 was a bumper year for most. So with reduced colony numbers, a bumper year equaled a disaster year – hardly a sign of a healthy industry – and with a more typical year in 1997, we will see some of the chickens come home to roost.

I'm beginning to hear rumblings from some commercial beekeepers about quitting the state entirely and relocating to other states where they don't have to face these problems – especially those who are mobile and have been hard hit by pesticides. Other less fortunate beekeepers may simply have to fold their tents and go out of business, and we have seen this happening at an alarming rate around the country.

With the significant reduction in colony numbers we've already seen in Colorado, any exodus out of the state or increase in business failures will only add to the ripple effect for producers of melons, cucumbers, or fruit and berry crops, where pollination is essential to their crops. This has implications for $240 million in yearly agricultural production in Colorado, and if the melon growers and orchardists haven't been paying close attention to these problems, they had better start or they may find that their industry is "remarkably healthy," just like the beekeepers.

In fact, much of agriculture may become "remarkably healthy." Colorado hay producers, for example, probably see no connection between themselves and the problems the beekeepers are facing, and on the surface at least, this is accurate. However, when they go to plant a new field, they need seed, and that seed production requires pollination (leafcutter bees are used for alfalfa pollination, but honey bees are still the primary pollinators). If pollination comes at a higher price because of a lack of bees, then the cost of seed rises, and in the worst case, seed may be in short supply regardless of the price. Some industries which depend directly on pollination may be replaced by imports from other countries, with the inevitable displacement of agricultural people formerly employed in those industries.

The sad fact is, we don't have to be going through this misery. Out of the thousands of pesticides on the market only a handful are responsible for the bulk of the bee kill problems, and for those, the federal label restrictions would eliminate the

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GUEST ... Cont. From Pg. 15

damage – *if they were followed.* Far too frequently they aren't followed, though, and we still have aerial cowboys and farmers who think they should be able to do whatever they please on their own property. Rather than seize the opportunity to show that they (sprayers) are responsible and concerned, they dismiss the beekeepers and continue with the most flagrant abuses of pesticides, and the state sits by and tolerates this. In July a beekeeper in southeastern Colorado who had experienced losses of hundreds of colonies to the spraying of Furadan on alfalfa called the state shortly after the spray kills to complain about spraying on alfalfa in full bloom – a clear violation of the label laws. He was told, "Gee, I won't be able to get down there for two or three weeks."

Ultimately all of the farm community will suffer as the issue undermines what public support there is for the use of agricultural chemicals. People will begin to question all uses if they see that there is no willingness to honor the label laws when there is obvious damage being done.

It doesn't have to be this way. Boulder County is an example of how beekeepers and farmers can live together in harmony without anyone suffering too greatly. We have seen only minor spray damage in the past two years, a result of cooperation between beekeepers, sprayers, and farmers, as alternatives have been found for the most damaging pesticides. Bees aren't any more important than corn or beef or sheep, but they are the Miner's Canary of agriculture, indicating the tip of much more serious problems. If we don't begin to make some sensible decisions soon and start cooperating, we may all be "remarkably healthy."

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Tom Theobald is a small-scale commercial beekeeper, specializing in top quality table honey produced locally. He is the VP of the Colorado Beekeeper's Association and President of the Bolder County Beekeepers. He is a regular contributor to the Fence Post newspaper.

Roger Morse

Research Review

"Honey bees, and hummingbirds, offer interesting studies in pollination ecology."

Honey bees have senses of color, design, taste, and odor. Individual bees use these senses to orient themselves as they fly from a flower of one kind to another of the same kind. Information about color, design, and odor cannot be conveyed through the dance language. Odors may be carried externally on a bee's hair for a short distance, probably not much more than 100 yards. Taste information can be conveyed from one bee to another as they exchange food, but this is not an important part of the language that honey bees use.

Using these senses promotes flower fidelity or faithfulness. Being faithful to one flower is in the best interests of both the flowers and the bees. Pollen from a dandelion can fertilize only another dandelion, not an apple or a pear, and so plants mark themselves by color, design, odor, and taste so that the bees don't get lost and visit a flower of another kind. Being able to identify a flower of one species is also of importance to bees, since once they have found a good source of food, they want to stick with it.

But not all flowers are pollinated by bees. Some are pollinated by other animals. For example, one group of plants, especially in Central and South America, is pollinated by hummingbirds Because these plants are interested in attracteing hummingbirds, and not bees, to their flowers, they are different. The how is interesting and a short course in biology all by itself.

Color: Most flowers pollinated by hummingbirds are red. Red is on the end of the color spectrum, and honey bees cannot see red as a color, so it is seen by them as black. Since bees are accustomed to colored flowers, those that are red are not attractive to them, and they spend little time investigating them unless some other characteristic causes them to do so. Tests using feeding stations having different-colored backgrounds show that honey bees can see four colors distinctly: yellow, blue-green, blue, and bees can see into the ultraviolet end of the spectrum, something we cannot do. Humans, on the other hand, can see about 60 colors distinctly.

Design: The design of a flower is of importance to a bee, too. And, as we might suspect from our knowledge of the color sense, the honey bee's sense of design is good, but not as fine as that of humans. Honey bees will, for example, confuse a circle of a solid color with the same-size square of the same color. However, designs that appear broken to us are more easily distinguished by bees. Flowers pollinated by hummingbirds are very different in design, too; they are long and tubular. Hummingbirds have long beaks with which they can easily reach the nectar, while crawling down and up out of tubular flowers is not something bees normally do.

Odor: Hummingbird-pollinated flowers are odorless. This is also foreign to honey bees that are accustomed to flowers with strong odors. These odors usually come from the nectar and are part of what is secreted from the nectaries. Their purpose, of course, is to attract bees, but they linger in the honeys for us to enjoy also.

Pollen and pollination: The sexual parts of most hummingbird flowers lie just inside the corolla or flower tube. Thus, when a hummingbird inserts her beak into the flower to collect nectar, the pollen rubs off onto the head and neck of the bird and is carried in this position from one flower to the next. Hummingbirds apparently show the same flower fidelity or faithfulness as is found in honey bees. However, there is no way birds can collect the pollen smeared on their neck feathers, so it is not used by them as food.

Hummingbird-pollinated flowers compensate for the bird's inability to feed on the pollen by secreting a nectar that is rich in protein. Some nectars contain as much as seven or eight percent protein, so pollen is not needed in the bird's diet. But, there is still more. Not every flower contains nectar, but those that have nectar have a large quantity of it. This apparently does not discourage bird foraging, but again it is a way of life foreign to a honey bee.

Hummingbirds eat some insects, but most of their food is nectar. In the tropical areas where they live, there is a series of plants that bloom one after the other during the year. The fact that flowers of the type they feed on are not available during the cold months in the North means there are no hummingbirds that live year-round outside of the tropics.

Summary: The research I reviewed here is not new; in fact, it was published a number of years ago. I review this subject each year in my class in elementary beekeeping as being one of those oddments of nature that makes the study of animal behavior so fascinating. I do so immediately after discussing the dance language of the honey bee, and having just done so in my elementary beekeeping class, I thought I would write about it here, too. BC

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Mark Winston

Queens

"One topic has always stood out as the number one complaint of beekeepers worldwide, in the 27 years I've been working with bees: lousy queens."

I recently returned from a most enjoyable trip to Prince Edward Island in eastern Canada, best known as the home of Anne of Green Gables but also host this year to eastern Canada's annual Maritime Beekeeper's Tour. I always enjoy hearing about the troubles and occasional triumphs of beekeepers in different parts of the world, and every place I've visited seems to have its own individualized set of problems and opportunities. Yet, much is the same wherever I have been invited to lecture; beekeepers worry about how much rain they've been getting, are concerned about government doing too much or too little for their industry, and argue about which type of hive tool is the best and whether or not queen excluders limit honey production. One topic, however, has always stood out as the number one complaint of beekeepers world-wide, in the 27 years I've been working with bees: lousy queens.

Everywhere I visit, I hear a predictable round of stories about queens brought in from afar that were poorly accepted by colonies, locally raised queens that were superseded about as often and as regularly as the sun comes up, and queens that were balled as soon as they were released from their cages. I hear about gimpy queens, queens with poor laying patterns, queens that produce nasty bees, and queens that produce bees that don't produce honey. And then there are the queens with some mysterious disease that causes them to fail, queens that swarm at the drop of a hive tool, and queens that vanish without a trace. Occasionally I hear about a great queen with epic laying power that never swarms and lays gentle workers whose goal in life is to produce more honey than a beekeeper could ever extract. "Occasionally" is the operative word here; 99 percent of what I hear about is lousy queens.

Obviously I'm hearing a highly biased sample of queen stories, because beekeepers like to talk about what's wrong rather than about what's right with the beekeeping world. And just as obviously, there must be some decent queens out there, because the last time I checked, there were still quite a few commercial beekeepers making a living off of somebody's queens, and if all queens were as decrepit as what I hear described, beekeeping would have gone the way of earlier failed professions, such as mastodon hunting or saber tooth tiger fur-collecting.

Nevertheless, there are too many stories of bad queens floating around to ignore the obvious conclusion that many beekeepers are dissatisfied with both commercially available queens and those they rear themselves. Indeed, with all the things that can go wrong in queen rearing, perhaps it's surprising that we ever produce any good ones. Queen rearing is an incredibly complex beekeeping skill, and only the finest craftsmen possess the intuitive feeling, technical expertise, and patience necessary to consistently produce high-quality queens. A good queen is as much a piece of artwork as a Picasso or a Rembrandt painting, and the beekeeper who produces good queens is as much an artist as van Gogh or Monet.

There are three problems that I commonly see associated with poor queens, and each of them is solvable. The first is technique. Some beekeepers rearing their own queens often neglect the simplest aspects of good queen rearing procedures, and then are surprised when their queens are poor quality. The most common mistake I hear about is letting bees rear their own queens. That is, many beekeepers decide to split colonies and let the queenless half rear a queen, which is a sure recipe for consistently poor queens. Any colony that suddenly becomes queenless will attempt to rear a few queens, and while they usually succeed, those queens tend to be small and often are superseded. Queenless colonies put a high priority on producing a queen quickly, because they only have a few days in which to begin queen rearing before the larvae in the colony become too old. Thus, worker bees in these emergency queen rearing situations often pick older larvae to rear as queens, and queens reared from old larvae never fully develop their size and their queenly properties. Also, split colonies are not in the prime nutritional condition needed for good queen rearing, and poorly nourished queen larvae do not mature into good-quality adults.

The solution to this problem is simple. There are innumerable methods of queen rearing available to beekeepers that involve grafting young larvae into cups and placing those cups in colonies that have been manipulated to be full of young nurse bees and plenty of pollen and honey. There is no shortcut; if you want good queens, you have to specifically rear them rather than tagging your queen rearing onto another manipulation such as splitting colonies.

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"Perhaps we're missing an opportunity to improve the overall quality of commercially available queens through a national testing program."

QUEENS ... Cont. From Pg. 19

The second consistent problem I see with queens is poor selection of stock for queen rearing. This problem is less obvious, because any queen breeder or backyard beekeeper is able to discern his or her best colonies, and of course picks those to breed from. However, what appears to be a good colony in Southern California may not be such a good colony in North Dakota.

This issue was brought home to me a number of years ago by a Canadian project in which we took queens from western Canada that had been selected for tracheal mite resistance and shipped them to eastern Canada for testing. Similarly, eastern Canadian queens were shipped and tested in western Canada. Colonies were assessed according to honey production, overwintering ability, population, and temperament, and the queen lines were ranked from best to worst. Interestingly, the mite selection had little to do with the queen's performance in either location; we had excellent colonies from resistant lines, but just as many excellent colonies from queen lines selected on other criteria. On the flip side, there were abysmal colonies from both tracheal mite-resistant and non-selected queen pedigrees.

What was really interesting, though, was that the eastern queen lines performed much better in the east whether they were selected for mite resistance or not, and western lines did better in the west. The obvious conclusions are that selection under local conditions can be critical for good queen breeding, and that queens performing well in one environment may not be as prolific in others. These results were similar to a few comparative queen tests conducted in Minnesota and Ontario years ago, in which queens from commercial sources were set up in colonies and tested in the same locations. In each study, queens from some breeders were outstanding, while others performed very poorly. I doubt the problems with the poor queen lines had to do with poor queen rearing techniques; all of the queens involved came from skilled queen rearers who had been in business for many years and had excellent reputations in the beekeeping community. Rather, I think that the poor colony performance from some lines reflected the underrated importance of selecting breeder queens under local conditions.

A third, and growing, problem with queens has to do with mating. No matter how well-reared a queen is, poor mating will produce a dud queen every time. Problems with mating may be increasing in the United States because *Varroa* appears to have decimated the wild honey bee population in much of the South, where most U.S. queens are reared. While queen rearers attempt to set up drone source colonies for their queens, the number of those controlled drone sources necessary for good mating may have increased dramatically with the demise of feral bees. In addition, the art and science of where to put drone-producing colonies is still in its infancy, and our limited knowledge about where drones and queens go to mate has made controlled mating in the wild difficult to achieve. Recent research by Chip Taylor, Gerald Loper, and others into how far queens and drones fly to mate has begun to produce important information useful for a more sophisticated approach to colony placement to maximize mating success, but their work is only beginning to be implemented by beekeepers.

An entire issue of *Bee Culture* could easily be devoted to queen problems, but in the end, the beekeeping consumer has one overriding issue: Where can I get good queens? One solution that many beekeepers follow is to buy queens from a number of commercial sources, and continue to purchase queens from those suppliers whose queens are satisfactory. That, of course, is how our free enterprise system works, and this somewhat chaotic system does select for queen rearers whose queens satisfy their customers.

Perhaps, though, we're missing an opportunity to improve the overall quality of commercially available queens through a national testing program. It would not be difficult, or even overly expensive, to set up a number of sites across North America at which queens from different sources could be tested on an ongoing basis. Such a system would provide locally useful information about queens reared by participating breeders, and also give us a long-term ability to monitor the overall quality of queens and react to any indications that a widespread problem such as diminished feral colonies or a new disease was developing. The program could be conducted at various USDA laboratories and selected universities located in diverse climatic zones, and funded by a fee to participating queen rearers, who would benefit by "bragging rights" in their advertising should their queens perform well.

There's a lot of beef out there about lousy queens, but very little substantive information to substantiate the grousing or indicate what the problem might be if there is indeed a broad problem with queens. Instead of only complaining about lousy queens, let's put our queens to the test, and find out just how good they are. BC

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

? DO YOU KNOW ?

Mites, and Other Honey Bee Pests

Clarence Collison
Mississippi State University

Beekeeping, like any other agricultural endeavor, is not without its problems, diseases and pests. A wide variety of pests, besides infectious microorganisms, may attack the honey bee, bee brood, parts of the hive or attempt to remove the honey and pollen the bees have stored. In recent years the most important pest problems have been associated with the two imported species of parasitic mites; tracheal and *Varroa* mites.

Take time to answer the following questions to find out how well you understand beekeeping pests.

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

1. ___ *Braula coeca,* the bee louse, lays its eggs in capped brood cells.
2. ___ *Varroa* mites were originally parasites of the giant honey bee, *Apis dorsata.*
3. ___ The first egg laid by a female *Varroa* mite usually develops into a male mite.
4. ___ During the initial period of cell invasion the female *Varroa* mite feeds on hemolymph (blood) of the bee larva.
5. ___ *Varroa* mite offspring develop on worker and drone prepupae and pupae.
6. ___ The ether roll technique is commonly used to check colonies for tracheal mites.
7. ___ Both tracheal and *Varroa* mites lay more than one egg at a time.
8. ___ Female *Varroa* mites live longer in the winter than they do in the summer.
9. ___ The bee louse is actually a mite rather than an insect.
10. ___ Greater wax moth is capable of killing honey bee colonies.
11. ___ Two closely related species of the honey bee tracheal mite, (*Acarapis dorsalis* and *Acarapis externus)* are also internal parasites of adult honey bees.
12. ___ Male *Varroa* and tracheal mites develop faster than female mites.
13. ___ The active ingredient in Apistan Strips, fluvalinate, is a systemic acaricide.
14. Which caste of honey bees normally has the highest number of bee lice associated with it? (1 point).
15. *Varroa* mites prefer to develop on drone brood. Name three ways in which *Varroa* mite reproduction is more successful on drone brood than on worker brood. (3 points).
16. What are the chelicerae of the following *Varroa* mite stages used for? (3 points).
    Adult female mites
    Immature mites
    Adult male mites
17. What is the primary impact of female *Varroa* mites *feeding on adult bees? (1 point).*
18. *Please describe where varroa and tracheal mites mate. (2 points).*

Multiple Choice Questions (1 point each).

19. ___ *Tracheal mites were first found in the United States in:*
    A. 1985
    B. 1986
    C. 1988
    D. 1987
    E. 1984
20. ___ *The Varroa* mite life cycle consists of:
    A. egg, larva, inactive nymph, adult
    B. egg, protonymph, deutonymph, adult
    C. egg, larva, protonymph, adult
    D. egg, larva, adult
    E. egg, larva, protonymph, deutonymph, adult

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NORTH LITTLE ROCK

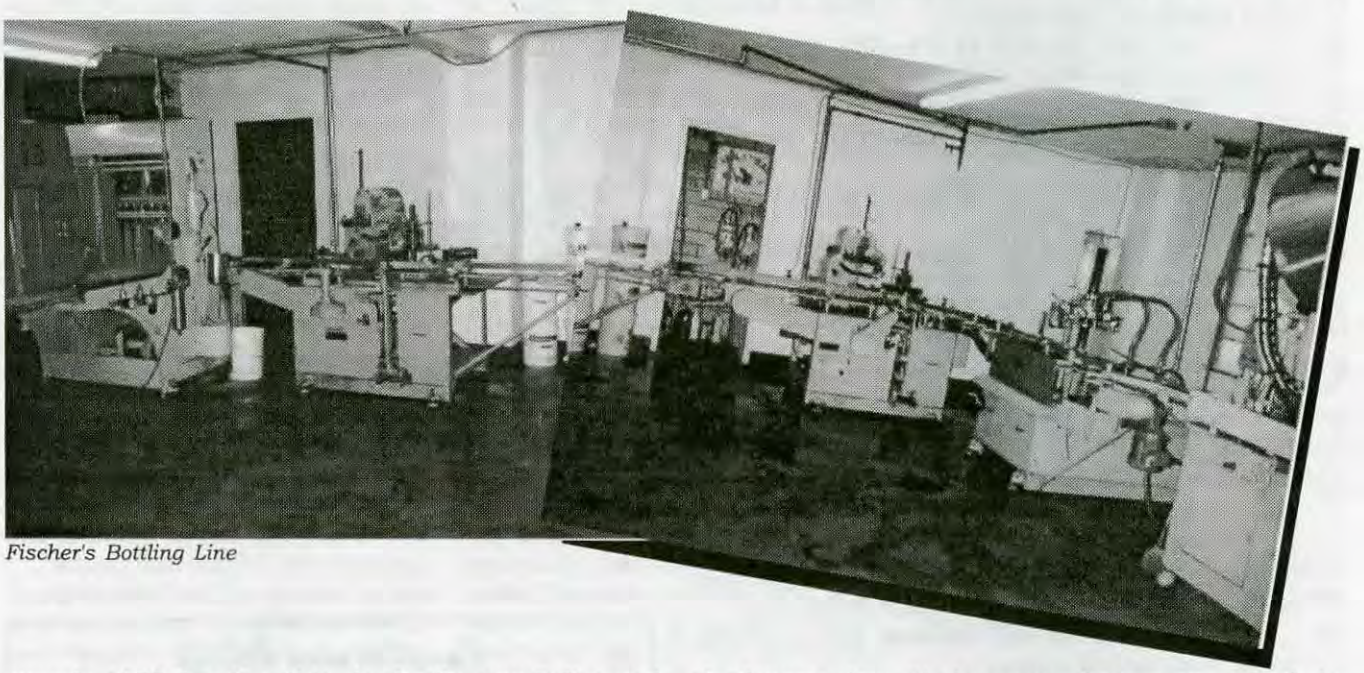
Fischer's HONEY

Kim Flottum

Back in 1945, Raymond Fischer had more honey than his family could use or give away, and it was time to bottle and sell the rest. He started his bottling company in the basement of the family home, in North Little Rock, Arkansas. The business grew at an astounding rate and he soon moved out of the basement to the garage, and in 1948 built, along side his house a bottling plant.

Fischer Honey has continued to grow, and in 1975 added on to the original plant with a much larger cinderblock facility. It has three loading bays, a good-sized warehouse and a modern bottling line.

Fischer Honey has changed since Raymond passed away in 1970, but is still in the family. Ann Fallon and Jane Eason, Raymond's granddaughters are Vice President and Secretary/Treasurer, respectively. And Margaret Faryewicz, Raymond's daughter and her husband Sonny are the owners. All are still associated with the day-to-day operations, but mostly in the office.



Fischer's Bottling Line

Joe Calloway is President now. His wife, Ellen is also a granddaughter. Joe runs most of the packing, buying and selling done by the company. He manages the plant with the help of 10 full-time employees.

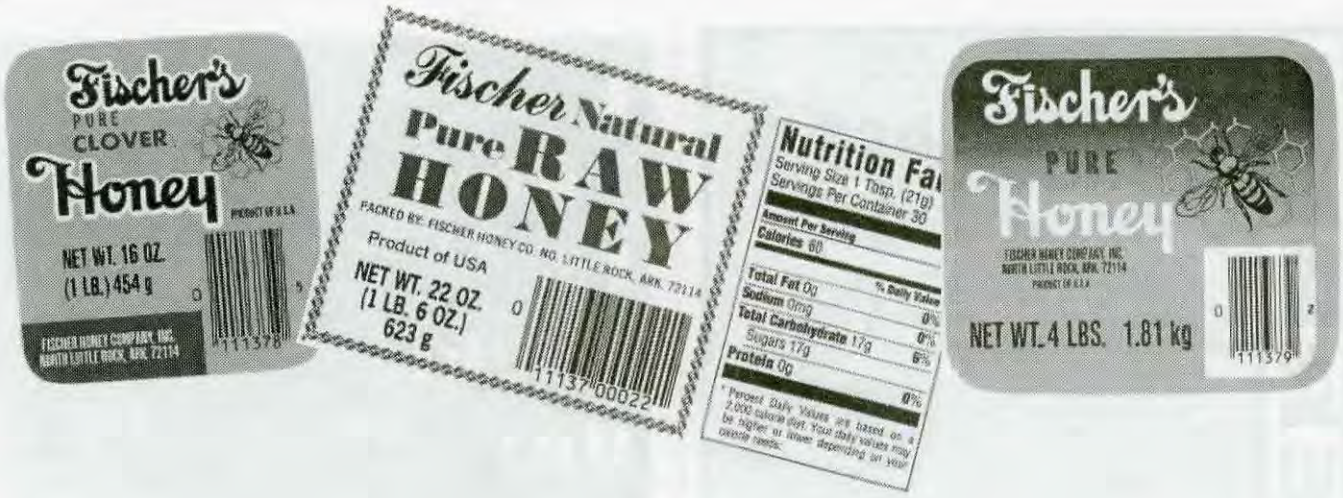
Joe took some time awhile back to show us around and explain how this mid-sized packing operation runs.

The business starts, as with all packers, with getting product in the door. Finding honey producers is getting a little tougher, but he still deals with pretty much the same core group. New customers are always welcome however, and new and varied sources and types of honey are needed. Customers come from North Dakota to Texas, and certainly in the local area. Specialty crops include tupelo, orange, clover, soybean and cotton. Fischers use no imported honey.

Once a contact has been made and the honey delivered it is graded for moisture and color. Some are tested further for contaminates and adulteration, but this is rare, according to Joe. Payment is usually made in 30 days or less, but sometimes is spread out over a longer period if the beekeeper chooses. Ninety days is usually the longest time. Fischers run about a one month inventory for both retail bottling and bulk sales in the warehouse.

Heating and filtering are next, prior to bottling, and Fischers have an in-house designed system that fits the existing facilities. "It's strictly not off the shelf," Joe said, "but it works for us as far as existing room and present capacity goes," he adds. Barrels are slowly warmed to decrystillize the honey and the liquid honey is then flash heated, filtered and flash cooled before being deposited into one or more selected tanks for bottling, putting into pails, barrels or totes.

Two hundred seventy five gallon totes (a large plastic cube that sits in a heavy wire support box with a



drain in the bottom) are used for industrial customers including some bakeries, meat packers, cereal producers and the like. Barrels, too, go to these types of customers. Smaller industrial customers use five gallon pails or the five gallon jug.

These customers generally want a consistent product, relative to color, moisture and flavor and each has their own 'blend' of the product Joe buys. This is true also of the retail trade they do, which is considerable.

Sonny Faryewicz, one of the owners.

Retail honey, once blended (or not if a straight variety such as orange is used) is then piped to the bottling line from one of the tanks. Four people operate the line, putting jars and caps on, getting labels ready and applied, getting caps on and bottles off the end of the line. "The bottling machine is mostly off the shelf," Joe said, "but we've tweaked it some to fit or needs."

Fischers sell eight ounce, one pound, two pounds, four pound, a 22 ounce pint, a 16 ounce creamed container made on site, and 12 ounce squeeze bear. They no longer handle comb or cut comb products because of the labor required.

Retail sales are almost exclusively made through brokers. They have product in regional Krogers, cover much of Arkansas, and a lot of stores in the five state Delta Region. They also have the regional Walmart Super Center account which is a substantial customer.

They deliver at least some of both industrial and wholesale product to warehouses in their own truck, but also have some picked up.

When viewed in comparison to other similar-sized operators the similarities far outweigh the differences. A small start, family owned and operated, careful and continuous growth and the usual fits and starts of the beekeeping and honey industry.

"Four or five years ago we did between four and five million pounds," Joe said, "but you can't stop. You have to keep growing," he summed up.

Fischer's Honey, in North Little Rock, Arkansas is a growing, and going company, fits and starts and all. BC

Joe Calloway, President, and chief worker, engineer and salesman.

It May Soon Be The Year For The

SMALLER HAULER

James E. Tew

Why wouldn't you go get your packages? After all, you get to take a trip in late winter to a warmer climate. You get to see another aspect of the U.S. bee industry and you get your packages straight home without using the Postal System so you save some money. Right?? All of those reasons are valid, but do not jump into this trip unprepared. This is going to take some preparation.

Though occurring quietly, there are major changes afoot in the package and queen industry that will ultimately affect beekeepers who buy packages or queens. Packages have become more difficult to get and the price continues to increase. Postage Special Handling rates are expected to rise again within a year or so. For me to compose my comments into a readable article, I need to put some restrictions on who's making the trip and how many packages are to be picked up. Buying packages used to be just a casual event, but this has changed from the way it was just a few years ago. I'm choosing to address some of the concerns of the "Smaller Hauler" in this article and am assuming that 30 - 130 packages are going to be picked up.

Conversations with the Producer. You're going to need to talk to the producer several times, about several things. First, ordering dates and prices. Are packages still available on the dates you need them? Most customers have a date range (e.g. The *week* of April 20th - not the *day* of April 20th). Harvesting living animals is not like buying a shirt. At this moment, it is December, 1997. If you're considering ordering packages for the 1998 spring season, you've already waited a bit late to place your order. Placing orders in September before the next spring is becoming quite common. Only a few years ago, you could pick up packages at nearly anytime during the production year. Choose a package producer in whom you can have trust - which is not difficult to do. All package producers that I know value their customers highly and provide the best service they can. Call around to get suggestions. Having recommended that you order packages early, now I must confess that it's not always possible to order early. Sometimes your plans change due to all kinds of beekeeping reasons. Just as you can frequently get tickets to a sold-out ball game or get a ticket on a full airplane, you can sometimes get packages late in the season due to another beekeeper's cancellation. Both the customer and the producer are guessing.....the customer guesses how many packages will be needed next spring and the producer guesses how many packages can be shaken and sold next spring. The weather can change everything. Employees become ill or take other employment or the customer has a greater winter kill than expected. Some years, things just don't go well. Be flexible in your order, but it's always a good idea to order early. In general, have your packages arrive about a week or so before fruit bloom in most areas. Another suggestion is to order an extra queen per every 10 packages or so. Hold them in other colonies or in cages in your new package bees. Extra queens are cheap insurance. If you can't use them, another beekeeper will be happy to have them.

How to pay for the packages will be a question that will come up early in your conversations with the producer. Every company has different expectations. Some will require a non-refundable deposit (applied to the purchase price), while others do not. If you order a significant number of packages and you and the producer have not worked together before, as much as half of the selling price may be required up front. How will the remainder be covered? Again, for smaller orders, no problem. But as the price increases, certified money orders or other types of secured payment exchange may be requested. No doubt the producer will bring this issue up without you having to remember it.

Do you have any empty packages

Continued on Next Page

"All package producers that I know value their customers highly and provide the best service they can. Call around to get suggestions."

from previous shipments? There are several important "Ifs" here. If the packages are in good shape and if they are the style that the producer uses, you can get a few dollars knocked off for providing your own empty packages. Tops and feeder cans will be provided anew. Since the packages cannot be taken to shaking yards until you arrive, keep in mind that you will delay the beginning of the shaking operation. This may be important if you were hoping to leave quickly. I don't know of any package producers who will *exchange* packages with you. In this day of mites and bee diseases, customers are too nervous to be given another's used packages.

So you think you want to help shake the packages? You will need to confirm that your help will be wanted. Frankly, you will probably just be in the way - in spite of your best intentions. Some producers will allow you to travel along and help where possible. Others will specifically not allow you to come along. You need to look at things from the producer's perspective. Suppose you are only one of five smaller haulers that day - of whom all want to go along. Suppose that the producer also has a big order to be picked up by a commercial bee operation that same day and suppose it is raining (I have seen this scenario played out). While the producer wants to make your trip a pleasant one, it may not always be possible. Then there are always the insurance concerns when taking inexperienced people to the yard. For all these reasons, ask if you will be allowed to go along. Be sure to take a camera - even if you can't go to the yards. You will be at the home facility and will see the queens being added and the packages being arranged for shipment. It will be a photographic moment.

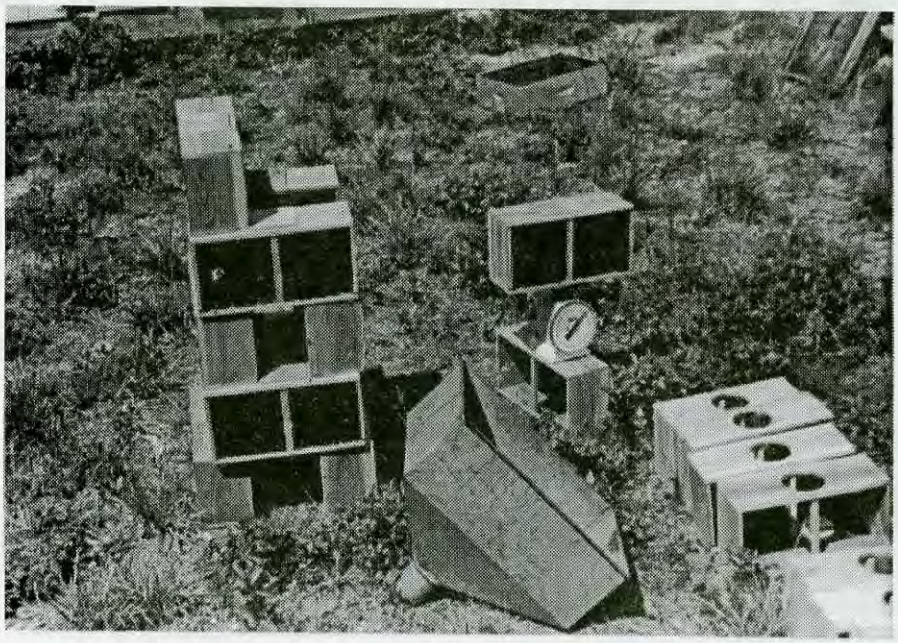
What are you planning to drive? Telling one to be certain that the vehicle is safe and sound would be like telling someone to breath about every four seconds - but it must be said - you must have mechanical confidence in your vehicle.

Don't even begin to list all the things that could go wrong or you will forever more never take another trip anywhere. No matter what you drive, it should be easy to ventilate. However, hauling packages exposed to roadway speeds is not a good idea either. If you drive a van in which you and the bees share cargo area air, be prepared to bond with your bees. [Many years ago, I and friends, legally took 30 packages of honey bees into Canada. Approximately 20-30 bees had escaped into the van cargo area and were on the windows. At the Canadian border, the immigrations officer excitedly proclaimed that we, "had a bee in the van." At his recommendation, we pulled through the inspection island and released the "bee" (while keeping the remaining 450,000 bees out of sight.)] It is not as commonly known that one can have an allergic reaction to bee components other than venom. Some people are allergic to bee hair or to bee feces. In fact, I personally react to bee feces by having watery, itchy eyes and eye lids, but that's another story. No doubt just riding with a load of packages for a few miles involves little consequence, while riding with a load for a couple of days can be a different story.

Constantly running your vehicle's air conditioner is a good idea, but be sure to monitor the packages in the very back. It may be not be so cool back there.

How about using a pickup truck? Such a vehicle is better than a van or car in some ways while worse in others. The truck will need a cap on the bed - or some kind of wind break. Obviously having clusters exposed to roadway speeds for hours - even days - will wear the bees down. The cap will also protect from the sun while you are gassing up or eating your 8th consecutive fast-food meal of the trip. If the weather prediction is for warm weather, toss a water hose on the truck for those emergency situations that arise. If the truck must sit for a while, you can lightly mist the load to keep them cooled down. In general, bees overheating is always a bigger problem than overcooling. Plus carbon dioxide accumulates as the bees breath and carbon monoxide accumulates as engines idle.

Also take along a good flashlight and a few basic tools. Never leave



home without duct tape. For the first time, I am putting a cellular phone in the "necessary" column. If you don't yet have one, surely you can borrow one.

Should you have special insurance coverage when planning such a trip? No doubt I will get comments on this topic for nothing I say will be exactly right for every case, but in general, the smaller hauler will not need special coverage. In fact, it's nearly impossible to get even if you did want it. You'll be using a regular vehicle. It won't be heavily loaded, and most importantly, you're not hauling for hire on a regular basis. Even so, if you are uncomfortable, give your agent a call. Be ready for lots of questions and even a negative reaction. After all, aren't thousands of bees in wire cages dangerous? All in all, for the occasional hauler to carry special liability coverage is probably an overkill. But how safe should you be? I don't know. A successful trip is very satisfying while an accident can leave bad memories for a long time - but any accident will do that. Use common sense. Be as prepared as you can be. However, if your contract hauling project continues to grow, get more advanced insurance advice.

Can you bring back a few packages?

Choose your customers carefully. Hauling for yourself is one thing while hauling for others is something else all together. Anyone you haul for should be a pretty good friend. In an ill-defined way, the hauler becomes responsible for the success and productivity of the delivered packages. Poor queens, late build up, and no honey crop are frequent complaints, plus you're going to be exchanging money. Yet the hauler has nearly no control over the apicultural expertise of the beekeeper for whom he is hauling. It's better to be involved with a friend under such conditions rather than someone you don't know well. Heaven forbid, but what if something goes wrong on the trip?. Are you liable for the costs of the loss? (Hmmmm..? Let me think ...maybe working with a friend would not be such a great idea in this case...you decide).

All ready to leave? Just before getting into your road-worthy vehicle, make one last call to the producer to confirm the schedule. Much better to be surprised at your home rather than be surprised in his parking lot. At this point, you already know how to pay for the merchandise, when to arrive, navigational directions to the operation, and whether or not you will go to the out yards. You sound ready to me.

"What are you planning to drive on the trip? Telling one to be certain that the vehicle is safe and sound, would be like telling someone to breath about every four seconds – but it must be said – you must have mechanical confidence in your vehicle."

With a bit of luck, the well-planned trip should be pleasant and uneventful. Most beekeepers will see more bees than they have ever seen in their beekeeper lives. It will be hot and the energy level will be high. You will find that the producer will have abundant suggestions concerning the arrangement of load and your hauling plans. I suggest that you listen to them. Your package order will be positioned on your vehicle, using wooden strips, in such a way that there is always an air space between and around them. Without the strips, the package load can shift. Packages stacked immediately next to each other generate large amounts of heat and die readily. The day will move along quickly and before you know it, you will be loaded, payment made, and you'll be positioned for take-off. As the package crew waves goodbye, you should realize that, at that moment, the packages are your responsibility - they are your bees.

Since you will be leaving during the late afternoon, one of your first concerns will be how to pass the night. It's definitely better for the bees to keep moving while it's cool, but don't push yourself too hard. You just had a long trip down and a long exciting day. It's easy to be tired. If you stay at a motel, use common sense in the parking lot. Try to get away from other people, but don't leave your open bee load too exposed to vandalism. [Early one morning I noticed an oddly-configured trailer near my pickup in the Day's Inn parking lot. As I walked within a few feet of the trailer to get to my truck, I was shocked to see a fully grown tiger nonchalantly lying in a cage. The tiger grunted. I did, too.] Don't surprise fellow travelers more than necessary. This goes for restaurants and service stations, too. Don't leave your truck idling due to carbon monoxide accumulation from the exhaust system. Invariably, a few bees will be loose on and around the load. Fellow travelers won't necessarily see you as brave, but will more frequently see you as being deranged and possibly dangerous. Get the truck away from the gas pumps as quickly as possible. The trip home has one paramount theme - Keep Moving. Resign yourself to fast-food and quick restroom stops.

Keep the landing party at home updated. The feeder cans will provide food for several days, but have your customers at the ready upon your arrival home. The faster you get the package to them, the quicker your obligation ends. Even on the best of trips, expect a 100 or so dead bees in each package. Now, you will need to get the packages installed as soon as possible. Won't this hurry, hurry, hurry trip ever end. Yes it will - several months later after you have your supers on. BC

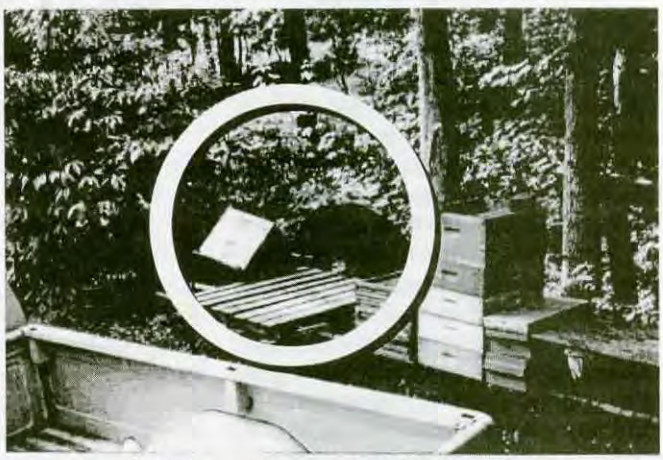
James E. Tew is State Specialist in Apiculture, The Ohio State University at Wooster, Ohio.

THERE'S A BEAR OUT THERE!

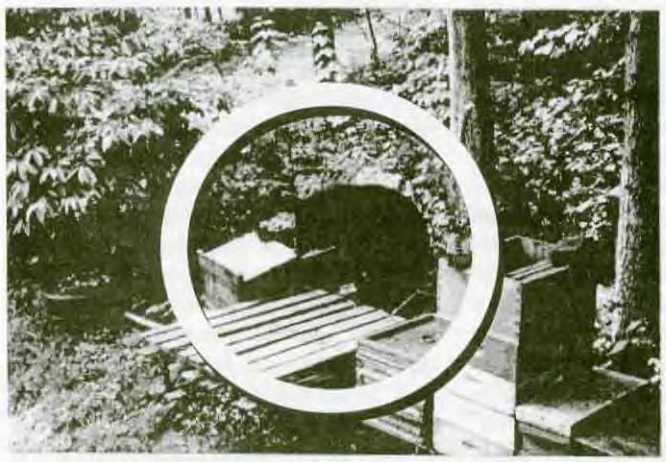
Last June, Carl Gardener looked out the door of his honey house and saw a sight not terribly comforting – to a beekeeper or anyone else.

Just across the driveway, on the other side of his pickup truck, a bear was investigating some unused equipment sitting on a hive stand.

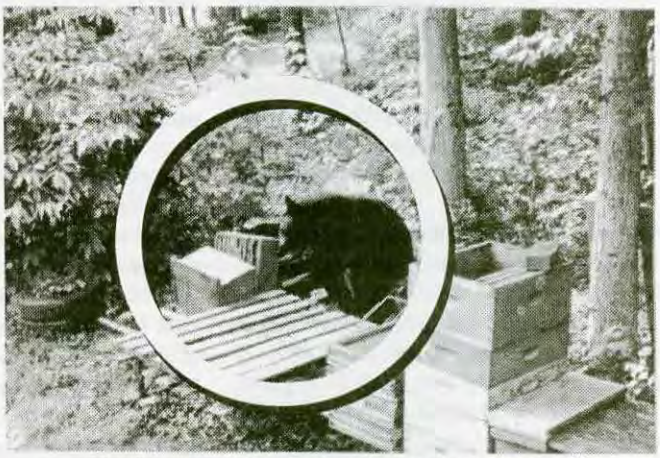
First, let's see what's inside.



I guess the only way to see is to get it down to my level.

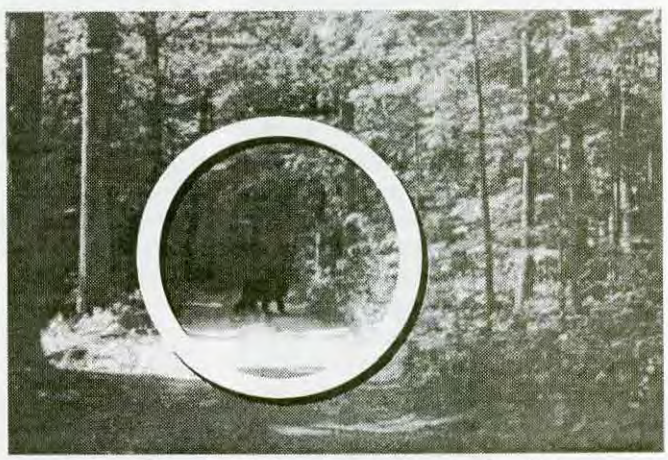


There. Smells good, but this one's empty.



Oh, there's another box, underneath. Let's see if that's any better.

Humph! Empty Too! If you can't do better I'm going to check out somebody else's bees.



Except for a few unsettled nerves, and a couple of hive bodies, no damage was done and bear and beekeeper parted as, well, still friends. Kind of. (photos by Glenn Clayton, Shipman, Virginia.)

POLLINATING IN GREENHOUSES

Brian Sherriff

I have been supplying bees on contract to growers using greenhouses for about 20 years. Before they used honey bees, the growers used blowflies for pollination of cauliflower seeds. They bought maggots from the local fishing tackle shop and let them develop in the greenhouses.

Blowflies were reasonably successful but only wandered around on the plants with no drive to pollinate.

When I first started to put honey bees in greenhouses to pollinate broccoli, the grower had both blowflies and honey bees. When the crop was in polythene greenhouses, the bees pollinated all parts of the plants except the sides of the plants touching the polythene, but the flies were able to travel around that area quite efficiently, even when the polythene was damp from condensation.

My cauliflower grower has also tried bumble bees but found them to be too expensive as they are double the price of two colonies of honey bees in a greenhouse, and only about 200 bumble bees are provided against the 8,000 to 10,000 honey bees in a colony.

We use honey bees to pollinate cauliflower and broccoli in sealed greenhouses to produce seed for the growers for the following year. The greenhouses are sealed because each greenhouse has a different variety of seed, and bees must not fly into another greenhouse and bring back a different pollen as this could produce a new hybrid strain. We pollinate enough seed for about 4,000 acres, which is most of the requirement in the United Kingdom.

We use Smith-style hives consisting of a normal floor, entrance block, brood chamber with 11 combs, a top feeder and cover board, and two straps. We supply about five combs of bees consisting of one queen, sealed and unsealed brood, and plenty of young bees.

So far, we have not seen any evidence of *Varroa* infestation, but when we check in early Spring we do not use colonies that have chalkbrood or any other problems. We pollinate strawberries at the end of February or early in March depending on the weather and variety and we pollinate the cauliflower later in the year – about the end of April or early in May as required. Bees do not like to pollinate strawberries or cauliflower, but if they are confined and have no other source of nectar or pollen, they will do an excellent job. The same applies to tomatoes, cucumbers, and runner beans. Sometimes the grower will leave one end of the polythene greenhouse open for ventilation if the crop is for fruit and not seed. Then the bees can stay in the greenhouse in cold and wet weather and pollinate the crop. But if the weather is fine, the field bees will go outside for pollen, nectar, water, or propolis, and then only the young, recently emerged bees will stay inside.

Over the years we have used several types of feed for the bees. At first, we used sugar syrup in top feeders but found this to be heavy and awkward, as each colony has to be carried into the greenhouse. It is easy to spill syrup over oneself when carrying a colony with top feeder in place and also in the vehicle when traveling.

We preferred to prepare the feeder before going into the greenhouse since to open the hive inside resulted in the bees coming out of the hive too soon and in an agitated frame of mind.

We then tried feeding granulated sugar in one-kilo bags from the supermarket. We dipped one end of each bag in water long enough to allow the water to soak through the paper and dampen the sugar. We would tear the damp ends of the bags, exposing the damp sugar, place three of them directly on the top bars, cover them with plastic to keep the sugar damp, and then cover the whole lot with an inverted top feeder.

In recent years we have found fondant to be the best form of feed in the greenhouses. We place two or three slabs, each about three pounds in weight, sealed in plastic with a hole torn in the underside giving access to the bees, directly over the top bars of the brood chamber.

We buy fondant in 25-pound cartons and slice it into eight slabs about three pounds each, cover all round with snapwrap, and replace in the original box, ready for use. A large knife is needed to cut the slab, and this should be dipped frequently in water to keep it moist.

Bees can get plenty of pollen in greenhouses, but with strawberries and cauliflower, only a little nectar is produced, so feeding is very necessary to encourage the queen to lay.

We prepare colonies for greenhouse pollination in the Autumn and use Apistan strips for *Varroa*, although to date we have not had evidence of its presence. Six weeks later we remove the strips, clean the hive, feed, and provide ventilation against a damp Winter. We also tilt all hives forward a little so that any moisture can run out. This also helps the bees to remove dead bees and debris.

In February we give a quick inspection if the weather allows and remove the hive from its stand, clean the floor, place a strap under the floor board, replace the brood chamber with bees, place three bags of fondant on the top bars, and cover with an inverted top feeder.

Continued on Next Page

One of Brian's colonies in a greenhouse.

We then place a cover board with the rim side down over the feeder and loosely fasten the strap. Next we place the entrance block on top and replace the roof.

When the grower requires the colonies, we go to the apiary and take the hives about midday; the flying bees then return to the hives that were left behind, and the hive we take to the greenhouse will have only young bees, queen, and brood. This ensures that the older foraging bees are left behind. If this is not done, the flying bees will, upon arrival at the greenhouse, simply rush out, not noting where they have come from, fly to the glass roof, and die.

To take the hives to the greenhouses, we simply place the entrance block into the entrance, making sure it is tight, place a hive net over the whole thing, and tighten the elastics so that it is secure; if bees escape they are trapped in the net. This is especially useful if we are moving bees in a car or van.

On arrival at the greenhouse we carry in the hive and place it on boxes provided by the grower, making sure the hive is slightly leaning forward and firm on its stand. Next we remove the hive net, and standing to one side or behind, remove the entrance block. In this way smoke is not required.

We ask the cauliflower grower to make sure that there is water for the bees and that the hives are placed on boxes about one meter above the ground so that the bees can fly over the crop easily.

The grower has the bees when the crop is about one-third in flower, and the bees usually get to work within a few minutes.

There are about 4,000 cauliflower plants in a large greenhouse, and we place two colonies in each. We usually leave the colonies four or five weeks, and they do not normally need further attention before collection. They have sufficient food, plenty of pollen and water. The upside-down feeder provides ventilation through the feed holes, and the strap is left in place for easy removal. There is little danger of swarming as the colonies are not strong and have plenty of room in the hive for development. BC

Brian Sherriff keeps bees near his home in Cornwall, England. He sells and manufactures protective clothing for beekeepers.

This Month's Honey Plant Is

H·O·N·E·Y·W·O·R·T

B.A. Stringer

Honeywort, *Cerinthe retorta*, is a hardy annual plant with flowers that are very attractive to bees. This alone is enough to recommend its cultivation in a bee garden, but it also has an intriguing story associated with its botanical name. *Cerinthe* is derived from the Greek words *keros*, wax, and *anthos*, meaning flower. The plant was named by the ancient Greeks who, noting the honey bee activity around the plant, thought that bees visited the flowers to collect wax!

Native to Europe and Asia Minor, Honeywort is one of about six species in the Cerinthe genus of annual and perennial herbs. It is in the same plant family as Borage, grows to about knee height, and is easy to cultivate. The hairy leaves, spotted with white or red, become progressively smaller as they alternate up the flowering stems. Showy purple bracts enclose the flower buds. As the flower opens, yellow petals, tipped with purple, protrude from these bracts. The fruit is smooth with a dull finish.

Honeywort has a unique appearance in the garden and was strongly recommended for more general cultivation in Bailey's *Standard Encyclopedia of Horticulture* (1947). A related plant, *C. major*, is a shorter, showy annual with very hairy leaves clasping the stem. Its flowers are also yellow with purple-tipped petals, and the fruit is shiny with brown spots.

I have been unable to locate a seed source for either of these plants, but I am glad to see a new Honeywort introduction from Thompson & Morgan, *Cerinthe major* var. *purpurascens*, which promises to be even more spectacular. Note its description: "The fleshy, blue-green leaves with white mottling spiral up the stem, transforming themselves into tighter packed, sea-blue bracts – and then the finale – small clusters of rich purple/blue, tubular, nodding flowers, which are cream inside and loved by bees." The plant is a hardy, evergreen perennial, growing to 12-18 inches, blooming from late Spring through Summer.

Seeds are available for $3.99 (Catalog number 6235), only from Thompson & Morgan, Inc., P.O. Box 1308, Jackson, NJ 08527-0308. If you try this unique flower, I would be interested in your comments about its growth and attraction to bees. BC

Illustration courtesy of Thompson & Morgan, Inc.

B.A. Stringer grows bees, and bee plants near her home in Blodgett, Oregon.

Biscuits & Honey . . . Bees

Rick Frey

If you build your own equipment, here's an idea that others haven't thought of, yet.

We all know how well biscuits and honey go together. Now there's a new twist on how a biscuit can improve the honey instead of vice versa.

One of the latest power tools to become generally accepted by woodworkers makes it possible for beekeepers to easily construct hive bodies and other equipment with one of the strongest methods of joinery available. A plate joiner, sometimes called a "biscuit" joiner is a fast, simple, and accurate lunge-cutting power tool that can be used to cut precise slots in both softwoods and hardwoods. Flattened football-shaped 'biscuits' of wood fiber wafers are then placed in the slots with glue and used to help line up surfaces to be joined. The biscuits swell in the joints when a water-based glue is used, making an extremely strong and firm bond that is essentially spline joinery. Biscuit joinery can be as strong as tongue-and-groove, mortise-and-tenon, standard spline, or doweled joints. Glues that are water-based include white glue, yellow glue, carpenters' glue, hide glue, and aliphatic glue.

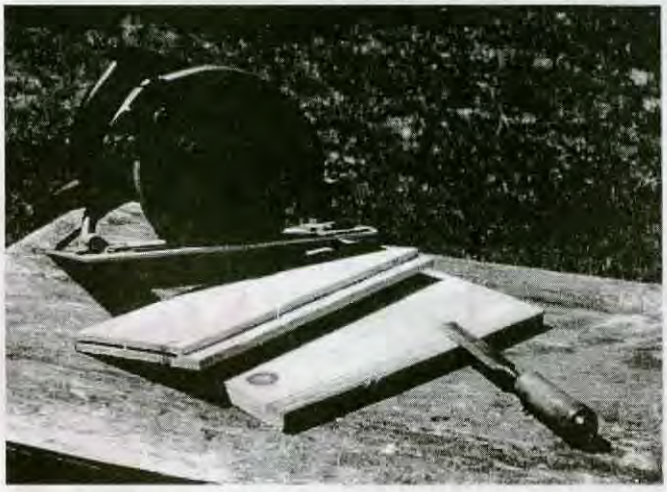
The makers of traditional beehive boxes seem always to claim that their corners are "dovetailed" though every one I've ever seen has actually been made with "finger" or "box" joint corners. True dovetails have pins and tails that interlock with a slight matching bevel that prevents stresses from pulling the corner apart. This simple, new technology pairing a precise slot-cutting tool with modern glues will produce joinery as strong and durable as any that is currently available.

Of course the usual complaint regarding homemade equipment has been the failure to standardize dimensions with commercially made equipment so that there is interchangeability between boxes, appropriate bee space maintained, reliable carrying handles, etc., but with accurate measurement and precise cutting of board stock of your choosing, you can make as good equipment as anybody. In addition, you can make nuc boxes, queen-rearing equipment, bottomboards, tops, and other useful or custom devices just as easily as butting two boards together.

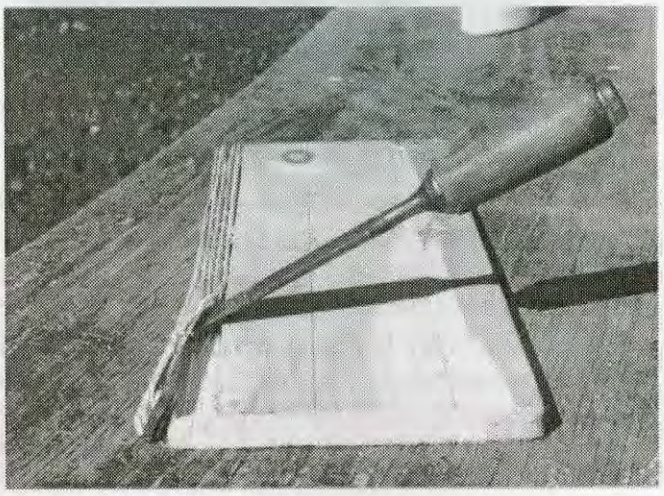
Since it's unlikely that you're starting from scratch, a good place to start would be to measure your current equipment noting any conflicts you already have with "frames from this place" and "supers from that place," and other dimension problems. Once you've determined the dimensions you need to use, it's a simple matter to cut the sides and ends to length, make the frame-rest rabbet in the ends of the boards with a saw or a router and then use the plate joiner to join your box together, glue, clamp, paint, and put it into service.

Rather than try to duplicate the routed-out handholds on the box sides (read in cold, thin spots that barely offer a finger grip), I prefer to attach grip rails that I find easier to grab and carry heavy loads with. Just be sure to locate your grip rails so they won't interfere with any sequence of stacking the boxes or prevent you from using a telescoping outer cover over the hive.

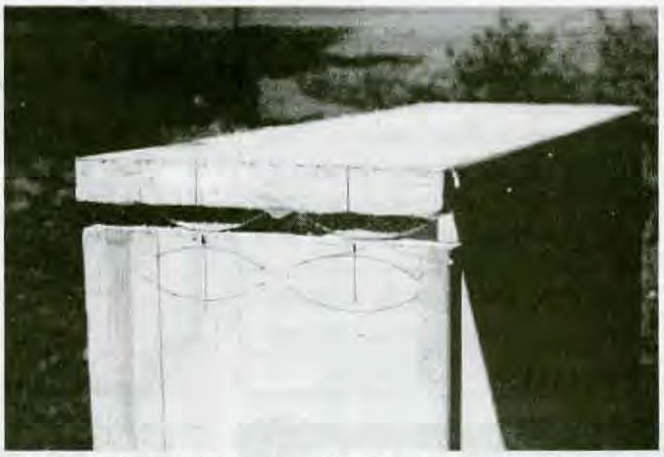
Two end boards are shown with the tools I used to create the frame rests, a circular saw and chisel. Obviously a table saw or radial arm saw would be even better. The top board is finished and has the biscuit slots cut. The bottom board is kerfed and needs chiseled out. These boards are for a medium super.



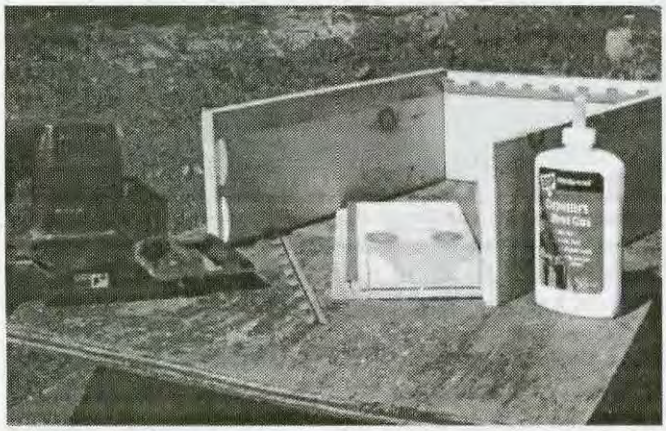
To form the rabbet for frame rest on end boards, multiple saw cuts kerfed out most of the wood to the appropriate width and to 1/2 the board thickness. The remaining wood was easily removed with a chisel or utility knife.



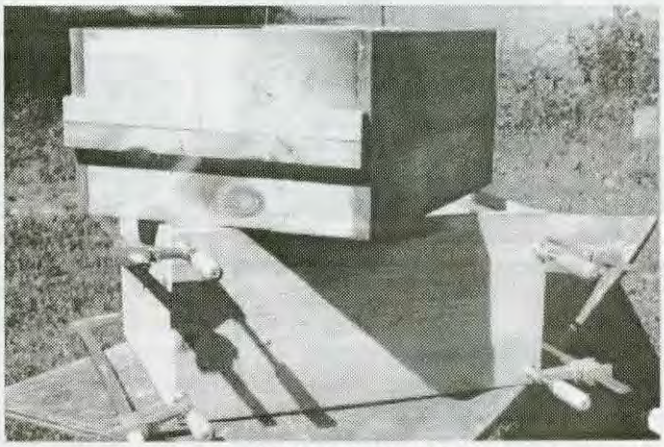
The biscuit slot cutting tool is shown with three each of the three standardized sizes of biscuits. Left: size #20 (24 x 58mm); center: size #10 (20 x 52mm); right: size #0 (16 x 47mm).



With biscuits and glue in place this side board is ready to secure to the end board. The centerline marks on each biscuit location on boards to be joined are a key measurement although biscuits and slots do allow some room for fine tuning adjustment.



Medium depth super ready to glue up shown with biscuit slot cutting tool, frame spacers and glue.



A finished hive body showing hand lifting bars on recently clamped hive body. The finished box on top was made last Winter and left exposed to the elements inside and out for six months to test whether the corners would open up. They did not.

Another factor to consider during construction is the material stock to use. With the biscuits to join the stock, you won't be limited to clear, full-width boards. You can either edge-join up smaller widths for your width dimension or even use three-quarter inch plywood.

The following description is for the hive bodies I made to match my existing equipment. A six-foot length is needed to make the perimeter of each hive.

Deep supers: ¾" x 9½" wide boards were cut:

- 20"-long sides
- 14¾"-long ends
- #20 size biscuits were used with carpenters' wood glue.

A frame-rest rabbet was cut into both ends 11/16" deep, 3/8" through the stock thickness.

For Illinois supers: ¾" x 6¾" wide board stock was used, and (8) #20 biscuits.

The only tools I used were the plate joiner, clamps, and a saw. The rabbet could be made with a router, shaper, or dado blade, but I just cut to rabbet width (11/16") with a handheld circular saw set to half (3/8") the stock thickness. I then just kerfed out the extra wood with several saw passes and cleaned up the cut with a razor knife. The next step is to install the metal frame rest or spacer, and the ends are ready to join to the sides.

To join the pieces with biscuits, it is necessary to plan the spacing of the biscuits (there are three common biscuit sizes #0, #10, #20) and then mark the center lines of the biscuits on the pieces to be joined. Next, center the biscuit-slot cutting tool over each face to be joined and plunge cut the biscuit-receiving slot. Spread the glue on all joining surfaces and in the slot cuts, place the biscuits, align the edges, and clamp. Aligning the edges is where the biscuits really help because there is enough adjustment movement available to get all surfaces flush. Once the glue cures, the biscuits swell and firmly lock the joint stronger than the wood itself. With today's glue technology and the biscuit placement, this results in a very strong and durable box.

The possibilities for making nuc boxes, queen-rearing boxes, and other custom equipment convinced me that I could easily recover the cost of the biscuit-slot cutting tool (I paid $99 for my Ryobi model JM80K). BC

Rick Frey has made a dozen or so pieces of beekeeping equipment with this technique. He is from Kendalville, IN.

TAKE THE HONEY
Leave The Money

Ann Svendsen

"Help yourself. Please leave the change in jar. Thank you."

Traveling north on Minnesota State Highway 75, near Lake Benton in the southwestern corner of the state, and right across the road from the Diamond Lake Church, there is a small roadside stand with jars and boxes of honey for sale from the Andersen Apiaries. No one is there to collect – the honey is sold on the honor system. Yes, in the '90s, if you can imagine, there is still a place that trusts in the goodness and conscience of modern man. The sign says, "Take the honey. Leave the money."

Honey Corner, as it is called by the locals, all started with a pig. In the '30s, at the beginning of the Great Depression, Mattias Andersen, a Danish farmer, came home one day and told his wife he had traded a family pig for a swarm of bees. His announcement was met with great skepticism; in fact, his wife considered the trade not much of a deal at all. But now, like it or not, Mattias was in the beekeeping business. Luckily for him, his son, Iver, took a liking to the bees and set out to learn about them. Because running the farm took up most of Mattias' time, he was most receptive when young Iver asked if he could take over the job of tending the bees. In fact, Mattias said, "You can keep whatever money you make from them." Thus began one of the oldest and largest beekeeping and honey-producing and packaging firms in the area.

Iver built a small roadside stand where assorted sizes of honey jars were, and are, displayed year-round. "Ninety-nine percent of the people are honest and leave the amount posted on the price list in a jar provided for the money," said Iver. "The one to two percent loss from bad debts or theft is nominal in any business environment."

Iver considers the business fascinating. Even though the bees are the actual "honey factory," there is still much work to do.

The honey-filled combs are taken from the hives and stored in a small room where an electric fan blows warm air around them as honey is extracted more easily if it is kept warm. An electric uncapping knife is used to cut the caps from the combs, after which the combs are put on a 'merry-go-round,' then into the extractor. The honey is then pumped into a clarifier, then a strainer, and is finally bottled. When electricity was installed around 1940, the work became easier, as the smoke from an old gas engine could be nauseating.

A color grader and a hand refractometer (to test for moisture) are used to test the honey. Only the best honey is bottled and affixed with the Andersen brand name sticker, which carries the notation AA-Premium, the top grade possible.

The bottled and boxed honey is stored in an upstairs warehouse before shipment to grocery stores and individuals. What used to be a real backbreaking job (Iver used to carry the heavy boxes upstairs on his back) is now done with the push of a finger as an electric motor puts the muscle into the task.

June, July, and August are busy months for the bees as they go about the business of making honey. Bees only live about six weeks during this "busy" period. In August, the task of getting the honey out of the hives begins with the entire operation usually completed by October.

In 1963, Iver was in Prague, Czechoslovakia, for the International Bee Congress. Deciding to get on a train to go visit his father's cousin, a missionary in Chezchia, he ran into trouble. The train was running late, and he didn't have the correct change. Enter Miss Walentyna

The honey stand where you buy on the honor system has stood for about 60 years.

Continued on Next Page

A hive scale tells how the colonies are doing.

Jaskulska, a native of Grudziadz, Poland, a city of about 75,000, who was on vacation from her duties as a civil lawyer and vice director (assistant to the mayor) of the 980-year-old city. She offered to give him the correct Czechoslovakian change for carfare and, at least, a glass of milk.

"And that's how it all started," she said. "He asked for my address, and I told him I wasn't interested in cowboys and sky divers!" But he persisted, and she gave in. "You see, I was basically shy, not as a lawyer, but I didn't trust men," explained Walentyna. "And I told my girlfriends, 'You see, you help a man, you have him on your neck.' "

The overseas courtship continued after Iver returned to America. He was not allowed to visit Poland, but Walentyna could come to America – only at his invitation. Walentyna's first application to visit was denied, so Iver finally advanced her fare and she made the trip, arriving November 29, 1967, for a two-month visit. On February 2, 1968, she became Mrs. Iver C. Andersen of Lake Benton, Minnesota. Iver, a Danish Lutheran, asked Walentyna if she would like him to turn Catholic for her. "I said 'no,'" she said emphatically. "I told him, 'That would be a disgrace to your parents who have raised such a fine man – we both worship the same God.'"

Walentyna talked a bit about her "growing-up" years in Poland, the Ukraine to be exact. "Every morning when we left for school, my mother would stand by the door and we would line up. We would each get one glass of milk and one teaspoon of honey before going out the door. I, the youngest of five, would always ask for more honey, but my mother said, 'No, we can't afford that,' so we had to be satisfied with what we got." Little did Walentyna know then that honey and her love of it would play such an integral role in her adult years.

She also spoke briefly about the war and the suffering of the Poles. "The Nazis . . . they took everything. My mother hid two family pictures in my shoes to keep them from the Nazis. The Ukrainian soil was the richest soil on earth, they call it loess, and the Nazis even stole our soil during the war. It is now dead because of Chernobyl."

After Walentyna and Iver were married, she did not want to be involved in the bee business. But gradually and "sweetly," Iver convinced her to "just try it," and soon they were working side by side tending to the hives and refining, packaging, and shipping the honey. "The bees in Europe are mean and wild, not tame like here," she said. And she talked about the industriousness of the female bees and about how the male bees are playboys. "What do they do?" I asked Iver. "Yah, one little thing!"

They won two first prizes nationwide and the Sweepstakes Award almost every year at the Minnesota

The honey house, with merry-go-round, extractor, and Walentyna.

VISITING?

If you come to visit southwestern Minnesota and want not only to buy honey from Walentyna but also to see what else the neighborhood has to offer, camping sites are available at Hole-in-the-Mountain Park, one-half mile west of Lake Benton on Highway 14. There are hookups, a fish cleaning shack, and a dumping station at Norwegian Creek Park, one mile north and one mile east of Lake Benton on Highway 75. There are also a motel and a fishing resort where you can find overnight accommodations. These sites are all in close proximity to beautiful Lake Benton, one of the top 10 walleye fishing lakes in Minnesota, in the Buffalo Ridge area. For your eating pleasure, there are a supper club, a drive-in, and an aqua-culture/health food restaurant in the town of Lake Benton where you will also find three unusual gift and collectible shops in which to browse. Take a tour to see the wind towers in the ever-expanding wind farm, reputed to be the second largest in the United States. You'll feel as though you're back in God's country.

State Fair. They were up to 380 hives.

And then, in 1980, Iver died. Walentyna was heartbroken.

Six weeks later, she went to Poland for a visit. "My mother said, 'Tell me all about it, child,' and she took me to bed with her and I talked and cried as she held me." Her mother, at age 92, came back to America with Walentyna. "At first she didn't want to come in a flying bus." Walentyna took her mother home to Poland every year between 1980 and 1987 and, at age 99, her mother died in her native land. Walentyna returned to America to continue with the bee business.

Attending the International Bee Congress in Hawaii, Walentyna won second prize. "So when I got home, I walked across the road to the Diamond Lake cemetery to Iver and I told him, 'See, boy, you're not the only one who can do it!'" She has also won two or three Sweepstakes Awards.

A man named John Feuerstein started coming to the honey stand. "John had had a heart attack and he came to buy honey because honey is good for the heart." As time passed, John asked Walentyna if she had ever thought about getting married again. "John doesn't have any hair, you know," Walentyna explained, "and my sister, Ivana, said, 'What's the difference between rubbing a knee or a head?'"

"I didn't want to marry John," Walentyna continued, "because I had told Iver I would never marry again." John, however, persisted, so Walentyna went to see her priest, Father Casey.

The good father told her, "But Walentyna, Iver sent John to you so you wouldn't be lonely." They were married in 1989.

Walentyna is now 70 years old. She, along with her husband, John, is still in the bee business, but now with only 50 to 70 hives. The southern bees brought disease, she said, and 1997 is a bad year – too dry.

An observation hive in the house tells what's going on with the bees outside.

As I sat in the living room of the farmhouse, amidst the Danish and Polish mementos, a large tapestry of a little girl with smiling eyes, holding a dove, caught my eye. Walentyna explained that this was a copy of a tapestry the Polish people had given to the pope. The dove denotes peace and the eyes denote love, or, as she said, "All a child needs is peace and love." There were Danish Bing and Grondahl plates, old Danish pictures, and a brass samovar from Russia, and several styles of honey pots were in her hutch along with crystal wine decanters and Russian stack dolls. "But," Walentyna asked, "what does it mean? Money is nothing. You can't eat gold or diamonds."

With a melancholy look in her eyes, she spoke again of Iver. "We never know what we need in this life. He went to the bathroom and never came back. We should live our lives fully. We forget we are only guests here on earth."

And then, looking at this woman, this free spirit, who had left her home to come to America to marry a beekeeper, I couldn't help but be inspired and filled with admiration. She was dressed in a man's long, plaid shirt, a pair of flip-flops, and not much else. No makeup, no hair coloring. She didn't feel the need to impress me – or anyone else. And because of her naturalness, I was impressed.

On my way out the driveway, I stopped and walked over to the honey stand. I "took the honey and left the money." BC

Ann Svendsen is a freelance writer from Tyler, MN.

"Walentyna is now 70 years old. She, along with her husband, John, is still in the bee business, but now with only 50 to 70 hives. The southern bees brought disease, she said, and 1997 is a bad year – too dry."

WINTER ACTIVITY

Richard Bonney

Throughout North America the length and intensity of winter varies greatly. Because of this it is difficult to talk about any aspect of winter management on an all encompassing basis. We are generally aware of the differences across large distances – between northern states and southern states, between eastern states and western states – but even over lesser distances we have differences. For instance, Southern California differs from Northern California; coastal New England differs from interior New England.

Even with differences though, most of us have a winter season that differs from the other seasons, and life both inside and outside the hive is at least a little changed. A substantial number of us button up our hives and don't think about the bees much for two or three months and more. But even though we aren't thinking about them, life goes on in the hive. Eggs are laid, brood is reared, on warmish days the bees fly out to see if spring has come, and unfortunately, during winter problems can arise.

For some of us, wintertime problems cannot be addressed, probably aren't even recognized. The hives are simply not accessible because of the severity of the particular winter locale or of the particular wintering site. This group must depend on careful fall management and winter preparation, hoping for the best when spring arrives.

Others, and that includes a surprisingly large group, can pay some specific attention to the bees even in the depths of winter. We may have subfreezing temperatures and snow on the ground but there are things we can do, and often should do, during winter. For a start, we can inspect our hives. Not a comprehensive inspection where we open everything, pull several frames, and examine carefully and at length, but we can do something less.

Many beekeepers feel that opening a hive in the colder regions in the winter is an absolute no-no, that the bees will all die. A hive can be opened in the winter; the bees won't die, as long as the inspection is done judiciously.

As an analogy, think about a family home, yours perhaps. What would happen if someone came along on a winter's day and lifted the roof off that home for five minutes? Some heat would escape, and the inhabitants might all be uncomfortable for a time, but Mom and Dad would rush to protect the kids, everyone would bundle up, and no one would be harmed. As soon as the roof was replaced, the house would start to warm up again and soon everything would return to normal.

In a bee hive, it wouldn't be much different. You can take off the covers, look, even lift a frame or two, and you will be doing no serious damage. In cold weather the bees

You can open a colony during the Winter when the weather breaks a bit. If you find the cluster at the top, you need to think of feeding soon. Consider fondant, or dry sugar on the inner cover for an emergency. Don't *pull frames to examine if it's real cold, but 40° works O.K.*

are already in a cluster, and any brood is within that cluster, well protected before you arrive on the scene. The bees will tighten the cluster, continuing their protection of the brood. Even if you were to pull a brood frame, studies have shown that frames of brood can withstand surprisingly low temperatures for more than just a few minutes.

A couple of years ago we had some very strong winds one snowy winter night and two of my hives lost their covers, both inner and outer. (The covers had been weighted, but obviously not enough.) I did not notice the problem until about 36 hours later. The bees were alive and well; they had withdrawn as far down as they could go and huddled. Perhaps some brood was lost when they moved down but I did not disturb them any further to check. In the spring those two hives seemed as strong as the other hives in that yard. Bees can withstand adversity.

As earlier mentioned, some beekeepers do not go near their bees during the winter. The hives are inaccessible because of location, or wrapping, or because winter inspection is deemed unnecessary within the beekeeper's management style. But even in some of the coldest regions, winter inspections are usually possible, and these inspections may turn up some real or potential problems.

I do not advocate that anyone inspect a hive on just any winter day, but nature seems to have recognized our need and usually there are at least one or two days in the middle of winter when the sun shines, temperatures are in the sixties, and the bees are flying. That is a good time to inspect. Which raises the question – what are we looking for?

The most common problem in winter is lack of food, but we also need to be aware of several other things – population level, signs of dysentery, an active queen, an appropriate level of brood rearing, possible build up of excess moisture, and dead bees blocking entrances. Then, what can we do if we encounter any of these problems?

Each problem must be dealt with in the context of your location and your climate. Keeping that firmly in mind, let's start with the inspection, and assume a mid-winter day with temperatures that allow at least a couple of hours of flying during the mid-day. Maybe in your situation you have many such days, maybe a few, and for some, none. For those of you who never have any such warm days in winter, you can still do the first two or three steps of the inspection.

First, check the entrance. Thousands of bees die naturally during the course of the winter. Some of these are carried away by their hive mates, others pile up at the entrance. Is the entrance plugged with dead bees? Clear them away, removing the mouse guard first if that's what it takes to do a good job.

Then, note the amount and color of any staining or spotting on the hive front and around the entrances. Light tan spotting in and around the hive is normal, resulting from the bees defecating as they leave the hive after a period of confinement. Heavy dark brown to black spotting and staining is different. It may indicate dysentery, which usually results from poor quality food, or it might indicate nosema disease. Review the article on nosema in *Bee Culture* November 1997. Assuming the staining is caused by dysentery, we will come back to a possible relief measure in just a minute.

Next, heft the hive. Lift the back from the bottom and make a judgment as to its comparative weight. Is it too heavy to lift easily? Food reserves are probably adequate. Does the weight seem moderate? Probably okay, but keep an eye on things. Does it lift easily? Potential trouble. Check food reserves carefully when you open the hive and be prepared to feed. Keep in mind that in mid-winter the bees should have at least half their winter stores still on hand.

Now remove the outer cover and any insulation board that may be in place. Are bees visible through the hole in the inner cover? If not, and if the hive felt heavy, then the cluster is still down below and all is probably well. At this point, bees may be coming up from the cluster to check on the disturbance. Be aware that even on days too cold for the bees to make cleansing flights, at least some of the bees from the cluster can and will fly if they are disturbed. If they can fly, they can

A bottomboard and colony entrance clogged with dead bees can be the sign of problems. Clean out, if snow isn't in the way. Spotting may indicate nosema, or dysentary.

and will sting if sufficiently provoked. If you are going to inspect further, smoke is in order. Minimize the disturbance. Any bees that do fly out on a cold day may not make it back to the hive. Their bodies will chill quickly with the exposure and their flight muscles will not work. They will drop to the ground to die.

If you have discovered that the cluster is at or near the top of the hive, consider that against the apparent weight of the hive. A high cluster usually goes with low food reserves. Again, be prepared to feed.

With the inner cover out of the way, look at the apparent size of the cluster. Keep in mind that the cluster expands and contracts with rising and lowering temperatures. Try to correlate the size of the cluster with the temperature and with the normal population level for the date. A colony with a mid-summer population of 55-60 thousand bees can be expected to fall off to the 20-25 thousand level in early March, at which time it starts to rebuild. If population seems low as you inspect, perhaps you can help. It is unlikely that you will be able to add bees, but you can help the existing cluster survive.

A colony with an undersized cluster is in danger of starving, even

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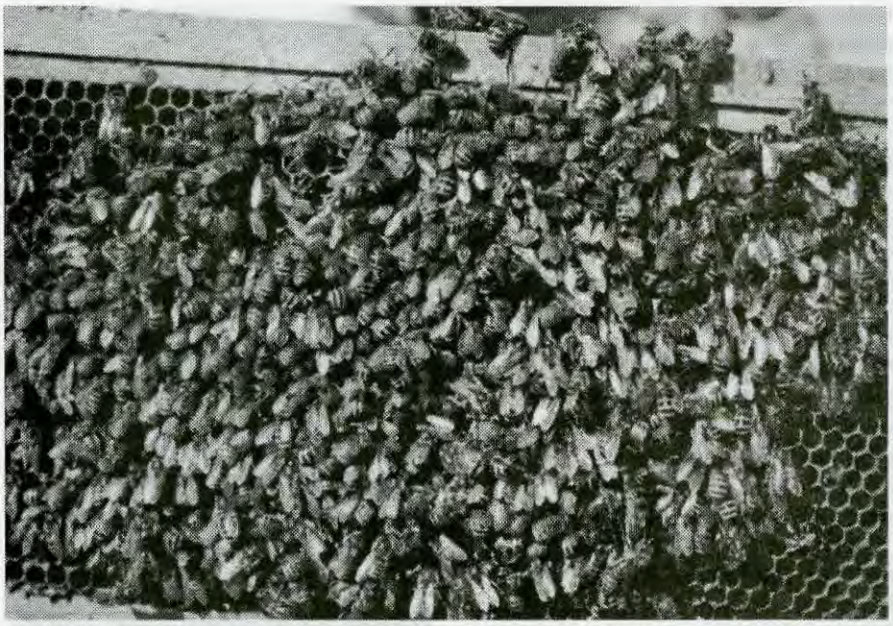


Colonies that starve often have many dead bees on frames, at or near the top. Many may have their heads stuck in cells.

WINTER ACTIVITIES ... Cont. From Pg. 41

in the presence of ample food reserves. During the winter a cluster of normal size generates enough heat to enable it to move, following the food as nearby stores are eaten. A small cluster may not be able to generate enough heat to keep the cluster mobile. Severe cold causes the cluster to contract and lose touch with their food reserves. Without food they no longer have fuel to survive.

What can you do? Consider moving some full frames of honey (or syrup) closer to the cluster. This will lessen the danger of losing contact with their stores. Be sure not to leave any empty frames intermixed with those containing stores. That is, move empty frames to the outer edges. While doing these manipulations, take great care not to disturb the brood nest.

Then, take another look at hive insulation. Presumably you did install some amount of insulation in the fall, but perhaps it would help now to add more. Think about top insulation, wrapping or windbreaks, whatever it takes to make it easier for the cluster to keep itself warm. Do not move the location of a hive in mid-winter, however. This would most likely do more harm than good.

Let's take another look at dysentery now. Dysentery is usually caused by poor quality food, compounded by long winter confinement. If you have any reason to suspect the quality of the food stores, perhaps you can replace some of it. Keep in mind that some honey – dark honey as collected by the bees, granulated honey, or heated honey that has been fed back – any of these may cause dysentery. In continuing cold weather when syrup cannot be fed readily from a feeder, replace a few frames of any suspect honey with frames of 2:1 sugar syrup (two sugar:one water). Place this syrup as close to the cluster as possible. Such frames can be prepared by taking frames with empty comb to the kitchen where you fill the cells with syrup. Squirt the syrup into the cells using a baster or spray bottle. Be prepared for a drippy mess. Pouring syrup over the comb or dipping the comb in the syrup does not work effectively.

With the food problem taken care of, quickly check for the presence of brood. Is brood rearing actually happening? Except for a brief period starting in late November, December, and perhaps into early January, you should find some level of brood rearing. In January that level will be low, but it will be ever increasing as spring comes on.

If no brood rearing is taking place, don't panic, especially if you found food reserves to be low. Start feeding and wait a week or so, then check again. Perhaps that was the problem. In the absence of adequate food reserves, including pollen, the bees will not raise brood. If as you inspect you find little or no pollen reserves, feed pollen substitute, as quickly as possible.

If the broodless condition continues, a possible though not certain conclusion is that the colony is queenless. Here, unfortunately, there is little to be done until the weather breaks and replacement queens become available.

Assuming now that all is well, continue to keep an eye on things. Remember that although by the calendar spring starts on March 21st, for many of us the significant spring nectar flows are one to two months later. Early spring is a time of heavy brood rearing and food reserves are depleted rapidly. Keep checking and be prepared to feed. BC

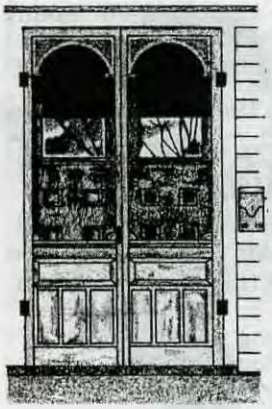
Richard Bonney is the retired Extension Educator for the State of Massachusetts, and a regular contributor to these pages.

Where Are You From?

The internet is an ever increasing presence on the beekeeping scene as more and more beekeepers go on-line. There they find Bee-L and the various newsgroups where they can participate, asking questions, answering questions, exchanging information.

Locale is important when we discuss hive management, but unfortunately, locale is seldom inherent in an individual's e-mail address, and too often we see queries and opinions put forth with no indication of what geography is involved.

If you go on line to ask a question, answer a question, give an opinion, especially when seasonal management is involved, include in your message a simple statement as to where you are – western Massachusetts, southern Ontario, or where ever it might be.



Ann Harman

Home Harmony

Christmas Is Coming!

The holiday season seems to be the time of year for fruitcakes. They are bought, made, given, received, and served. What do people do with fruitcakes? I found this wonderful bit in Irena Chalmers' *The Great Food Almanac*: "When a research firm polled some 1,000 adults about what they did with fruitcake, 38 percent said they gave it away, 28 percent actually ate it, 13 percent used it as a doorstop, 9 percent scattered it for the birds, 4 percent threw it out, and 8 percent couldn't remember."

I know what the problem is: All those fruitcakes were not made with honey.

Families have classic fruitcake recipes handed down through the generations. These are shaken out each year about Christmastime, and whether anyone wants them or not, the kitchen becomes a center for fruitcake making.

Why not try a different fruitcake this year? You can make this recipe for one of your fruitcakes and your traditional one as another fruitcake. In this way you can become part of the 28 percent who eat their fruitcake. This recipe is really good, probably because it is somewhat nontraditional.

HOLIDAY FRUITCAKE

A different approach to an annual treat!

1 cup candied pineapple
1 cup candied cherries
1 cup candied orange peel
1 cup brandied mincemeat
1 cup chopped dates
1 cup raisins
1/4 cup flour
1-1/2 cups flour
1 cup slivered almonds
1 cup chopped pecans
1 cup honey (a light variety to enhance the many flavors)
1/2 cup fruit juice (orange, pineapple, cranberry all work)
1 cup butter
4 eggs
1/2 teaspoon vanilla
1 teaspoon baking powder
1/2 teaspoon salt
1 teaspoon cinnamon
1/2 teaspoon powdered ginger
1/2 teaspoon nutmeg
1/2 teaspoon allspice
1/2 teaspoon powdered cloves

In a large bowl, mix the fruits and nuts in 1/4 cup of flour so each piece is well coated. In a separate bowl, blend honey and butter until creamy, and beat in eggs and vanilla. In third bowl, sift together 1-1/2 cups flour and remaining dry ingredients. When mixed well, stir into honey-egg mixture. Add fruit juice and mix again until moisture is evenly distributed. Stir in fruit and nut mixture. Pour batter into two well-greased 9" x 5" x 3" baking pans. Bake 2 to 2-1/2 hours at 250°F. Cool. Remove from pans and wrap in foil to keep moist. Store in refrigerator.

A Honey CookBook
A. I. Root Company

Instead of wondering what sort of gift would be appropriate for Christmas, think about baking something and freezing it until needed. You can wrap quick breads tightly in foil, which actually looks very festive. Then all you need to do is attach a ribbon and a card or tag. Quick and easy.

However, you must, in some way, let the recipient know that the quick bread is made with honey – your honey.

HEALTHY START BREAKFAST LOAF

Here is an interesting quick bread. It is not sweet as many are, so you may wish to recommend it for breakfast or to be served with a meal.

2 tablespoons butter
1/2 cup shredded carrot
1/4 cup coarsely chopped onion
1-3/4 cups all-purpose flour
1/4 cup whole wheat flour
1 tablespoon baking powder
2 teaspoons black pepper
1 teaspoon salt
1/4 teaspoon baking soda
1/4 teaspoon ground ginger
1/8 teaspoon ground nutmeg
1 cup milk
1/4 cup honey
1/4 cup vegetable oil
1 large egg
1/2 cup frozen, chopped spinach, thawed and drained
1/2 cup shredded Gruyere or Swiss cheese (about 2 ounces)
1/2 cup coarsely chopped walnuts or pecans, toasted (about 2 ounces)
1 tablespoon butter, melted

In a medium skillet, melt butter over medium heat. Add carrot and onion; cook, stirring frequently, until softened, 2 to 3 minutes. Cool slightly. In a large bowl, mix together flour, whole wheat flour, baking powder, pepper, salt, baking soda, ginger, and nutmeg. In another bowl, mix together milk, honey, oil, and egg. Stir in onion mixture, spinach, cheese, and nuts. Make a well in the center of flour mixture. Add milk mixture all at once to well, tossing with a fork until dry ingredients are moistened. Do not overmix. Spread batter in 9 x 5-inch loaf pan that has been dusted with flour. Smooth top. Drizzle with melted butter. Bake loaf in 375°F oven until brown, about 45 to 50 minutes. Let cool on rack for 15 minutes. Loosen bread and turn out loaf on rack to cool completely. Makes 1 loaf.

Great American Home Baking

BOURBON BREAD

This next quick bread is quite festive. You may wish to make some for gifts and some for yourself to serve during the holiday season. You can use a loaf pan or a mold or a Bundt pan.

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HOME ... Cont. From Pg. 43

1 cup unsweetened dates, chopped
1/3 cup bourbon
3 eggs
1/2 cup honey
1/4 cup melted sweet butter
1/4 cup heavy cream, evaporated milk, half-and-half, or milk
1 teaspoon vanilla
3 tablespoons brandy or cognac
1/2 cup raisins
1 cup chopped pecans
2 cups unbleached flour
2-1/2 teaspoons baking powder
1/2 teaspoon baking soda
1/2 teaspoon salt
1/2 teaspoon nutmeg
1/4 teaspoon ground cloves

In a small bowl, marinate the dates in the bourbon for an hour or several hours. In a large mixing bowl, beat the eggs until light and thick. Add the honey and beat. Beat in the butter, cream, vanilla, and brandy. Stir in the raisins, pecans, and dates with the bourbon (scrape out the bourbon bowl with a rubber spatula so you won't waste any). Mix to distribute evenly. Sift the dry ingredients together. Add to the liquids and fold in gently until just incorporated. Pour the batter into a buttered mold, Bundt pan, Kuglehopf pan, or large loaf pan. Bake at 325°F for 50 minutes or until the top feels springy and the edges are beginning to brown and shrink away from the pan. Don't overcook. Let rest in pan for about 10 minutes before unmolding onto a rack to cool. Store, wrapped in plastic wrap, in a cool, dry place (not the refrigerator). It will keep for about 5 days. Or you can freeze it. Makes one loaf.

The Garden Way Bread Book

HONEY WINE COOKIES

One of the nicest ways to give cookies is to bake 5 or 6 different kinds, then make a cookie assortment as the gift. Different cookies not only look attractive in a tin, but they offer something for everyone. Here's a cookie with a difference that would make a nice addition to the traditional Christmas cookies.

1/2 cup shortening
1 cup plus 2 tablespoons honey
2 eggs, separated
1/2 teaspoon grated lemon peel
2-3/4 cups whole wheat flour
3/4 teaspoon salt
1 teaspoon baking soda
1/4 cup white wine
confectioners' sugar

Cream shortening, add honey in a fine stream, beating only to blend. Add egg yolks and lemon peel. Combine dry ingredients; add to creamed mixture alternately with wine. Add nuts. Beat egg whites and fold into batter. Drop by teaspoonfuls onto greased baking sheets. Bake at 350°F for 12 - 15 minutes. Dust with confectioners' sugar. Yield 60 cookies.

The Healthy Taste Of Honey
Larry J.M Lonik

HONEY SUNDIES

Here's a quickly made but delicious nut cookie that will be a good addition to a Christmas assortment.

1 cup shortening
2 cups sifted flour
1/2 teaspoon vanilla
1/4 cup honey
1/2 teaspoon salt
2 cups chopped pecans

Cream shortening. Continue creaming while adding honey in a fine stream. Combine flour and salt. Add to creamed mixture in two parts, mixing well after each addition. Stir in vanilla and pecans, mixing well. Shape into small balls and place on cookie sheet. Bake at 300°F for 30 minutes.

Honey Recipes Of The Williamson County Area Beekeepers

Your bees will be expecting you to give jars of honey and recipes as gifts, too. And don't forget to leave honey cookies out for Santa and one for each reindeer.

Richard Taylor

Bee Talk

"The life of the colony is carried on in the broodnest, and is precisely organized."

I've never talked about the brood nest as such in these pages, so that's what I'll do this time. Beekeepers tend to give little thought to the organization and dynamics of the brood nest, even though a basic understanding of all this is important for getting honey. We tend to think of a honey bee colony as simply a large population of bees, with queen and brood, occupying a beehive, but that is, of course, overly simple. Sometimes writers on bee culture refer to the bottom story of a hive as the "brood chamber," the story above that as the "food chamber," and everything above that as simply "supers." That, too, is somewhat artificial.

The brood nest is simply that part of the colony where brood rearing is actively carried on, and it can be anywhere in the hive, depending on circumstances. When a swarm settles into a new and hitherto unoccupied nest site, the bees suspend their new combs from the top, and the brood nest is, accordingly, established up there. Then, as more and more honey comes to be stored and the combs are extended downward, the brood nest moves down, too. Honey is always stored above the brood nest. Pollen is stored just below the honey stores and above the brood. Thus, when a comb is removed from the center of the brood nest, you find honey at the top and extending down the sides, pollen below that, then brood. Of course, the pattern is not exact. Pollen and honey are stored to some extent in the same area. But that is the general picture.

The life of the colony is carried on in the brood nest and is quite precisely organized. If you watch bees in an observation hive, they appear to be just milling about in a random way. Even the queen appears to be just wandering about, depositing eggs here and there more or less randomly, but all this is misleading. When you examine a comb of brood in various stages, you find that the queen has moved in a spiral, starting at the center and moving outward, and that this pattern is sustained, not only vertically on individual combs, but horizontally across the combs. She starts more or less at the center and moves gradually up and around and also across, so that the youngest brood, in any given cycle, is at the periphery of the brood nest and the oldest at the center. Then, as brood emerges, the whole cycle is repeated, beginning again at the center. Meanwhile, the workers are storing pollen around this brood nest, which has somewhat the shape of a ball, so that you find combs fairly packed with pollen at the sides. And above all this, the bees store and reduce the nectar to honey.

It all resembles somewhat a large number of workmen putting up a large and complex building. If you watch them all at work, the individual workmen appear to be wandering about in a random sort of way, without any general pattern to their combined behavior; and yet, what emerges is a building of precise and complex construction. The workmen's individual behavior was coordinated with that of all the rest in ways that are not apparent to an observer. It is much the same with individual bees in a colony.

All this has certain practical implications for colony management. For example, bees will not normally abandon the brood nest or any part of it. So if you put an escape screen or board of any kind underneath a super you want to harvest, and there is brood in that super, even if it is nothing more than a tiny patch of drone brood, then you find the bees are still in the super when you go to remove it.

The cluster, as it is aptly called, is always centered on the brood nest, which is sort of the heart of the colony. If, accordingly, the colony is very populous, as it is likely to be at harvest time, then the cluster of bees extends considerably beyond the brood itself. This explains why beekeepers sometimes find it very difficult to get the bees to abandon supers by the use of escape boards even when there is no brood in them. From the bees' viewpoint, that escape board has been inserted right into their brood nest, that is, into the cluster, so they maintain the ball-like shape of the cluster even when the top of it is cut off from the rest by an escape board. Beekeepers sometimes complain that, in the case of some of their colonies, they cannot get the bees to go down through the escapes, even when there are no obstructions to their passage and no brood in the supers. The explanation lies in what was just said. The bees that happen to be in those supers are already, from their point of view, in the brood nest, and they have no inducement to leave it. The solution to this problem, I have found, is simply to insert another escape board under the one already there. This creates too large a separation of the bees still in the

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BEE TALK ... Cont. From Pg. 45

super from those down below, and they abandon the super almost at once, in order to rejoin the cluster. The bottom escape board, in this case, does not even need to have escape devices in it.

The principles just outlined are also important for the proper use of Apistan strips. These are of no value unless they are inserted right into the brood nest. Having them up above, where the honey is stored, accomplishes nothing. Moreover, the strips should, as nearly as possible, be in or near the *center* of the brood nest or cluster, where there will be maximum contact with the bees. You should, accordingly, temper the directions that come with the strips with judgment. There is no fixed rule about where to put the strips, except to achieve maximum contact with bees. So if the cluster is small, as it is apt to be in the Spring, the strips should be close together. And if the cluster is off to one side of the hive, then the strips should be inserted over there, too, notwithstanding any instructions to the contrary. Most of my hives, in Spring and Fall, consist of one shallow and one deep, with the shallow on the *bottom*. The result is that the cluster is likely to occupy only the bottom part of the deep chamber, especially in the Fall. So it would do no good to insert the strips in the top or deep chamber – they would not reach down into the cluster. And the bottom story is too shallow for inserting the strips. What to do? I lay the two strips across the top bars of the shallow bottom story, near the center, making sure there is space underneath them, created by burr comb there, so as to achieve maximum contact with bees.

The proper understanding of the brood nest serves also as a guide to the use of queen excluders. How often we hear beekeepers say that they cannot get the bees to go up through the excluder, as if the excluder were some sort of obstruction to the bees. Whether the bees will go through an excluder to store honey above it depends entirely on where that excluder is *in relation to the brood nest.* As noted, it is part of the dynamics of the brood nest that bees store honey, not necessarily in the top of the hive, but just above the brood. There is never any significant expanse of empty comb between where honey is stored and where the brood is. So if there is room above the brood, and underneath any excluder, for honey storage, then that is where the honey goes. When that gets filled up, then the bees move on up through the excluder, sometimes overnight during a heavy flow. Thus, the excluder, by restricting the queen to the lower part of the hive, also determines that the brood nest will be down there, *and,* that surplus honey will be down there too, as long as there, is room for it. This is why small hives are necessary for getting comb honey. It is not so much to "crowd" the bees up into the supers, but rather, to give them little room for honey storage except in the supers.

So should you use queen excluders? It depends on what you are trying to do. So long as there is honey stored above the brood nest, in all the combs, including the center ones, then you do not need a queen excluder. The honey itself acts as a barrier to the queen; she will never go across that layer of honey to start brood up above it. So I never use excluders, and I never get brood in my comb honey because my colonies come into the Spring with plenty of honey from the previous season.

One last point of importance to comb honey producers. Why do some beekeepers get plugs of pollen in comb honey? Because the supers were too close to the brood nest. Pollen, as noted, is stored close to the brood, and generally above and around it. This is why certain intensive management systems, such as shook swarming, result in pollen in the supers. They are too close to the brood, and there is no honey barrier between brood and supers. Queen excluders have no tendency to exclude pollen from supers.

The organization and dynamics of the brood nest are fairly simple and easy to grasp, once you get them clear in your mind, and the implications for colony management are fairly far-reaching. BC

Richard Taylor is a philosopher and lifelong beekeeper who lives in the Finger Lakes region of New York.

Questions?

Bee Bee Tree Q & A

I got about a 25% germination from the evodia seeds you sent, and my question is, what do I do now? Move them inside for Winter, or leave them out in the cold?

Troy Hardway
Atwater, OH

Good question. I think you should leave them outside, in a well-protected place, but to be safe, I suggest you leave some out and bring some in, to be set out when they are a little larger.

Side ways?

Would there be any advantage to having the hive entrance on the side? I have heard that this would enable the queen to lay all the way to the bottom of the frames.

Bobby Robertson
Calhoun, GA

In nature, the bees have no tendency to orient their combs in relationship to the colony entrance, so for them, it does not matter where the entrance is. Some beekeepers like the side entrance because they find it easier to remove combs when standing on the other side of the hive. I doubt that, by itself, it makes any significant difference with respect to the size of the brood nest. I prefer the standard front entrance, only because it is standard, and I tilt my hives forward a bit for better Wintering. Also, the combs would not be quite vertical if the entrance were on the side.

Double Screens

I find what are called "double screens" mentioned in bee magazines. What are they, and what are they used for? The name suggests that a double screen is just a frame, the size of an inner cover, with a screen on both sides. If so, then why two screens, when just one piece of window screen or eight-mesh screen would prevent bees from passing through?

Louis Ostrander
DuRant, OK

Yes, a double screen is simply a frame screened on both sides. For some manipulations it is necessary, not only to keep bees from passing, but also to prevent physical contact with each other. For example, if you are going to have queens both above and below the screen, and it is not a double screen, then one of those queens will be killed because the bees are able to communicate the presence of the queens by contact with queen substance. Queens can be kept in storage above a double screen, but not above a single one. And you can make splits with double screens, but not with single ones. They are quite useful.

Better Wintering

I have four hives in double brood chambers and have been having severe Wintering problems. I do not wrap them, but they have wind protection from some cedar trees. We get lots of snow, and I find an awful lot of dead bees in the snow each year. I lost one colony last Winter, and the fronts of all the hives, as well as the frames themselves, are yellow stained. I gave the combs of honey from the dead colony to the other three. Now only one is still alive, and it does not look like that one will make it. How can I improve all this?

Joe Otap
Saranac, NY

My guess is you are not supplying ventilation to your hives. A Winter cluster gives off a lot of moisture in Winter. This accumulates in the hive, condenses on the inner cover, and drips back onto the cluster, resulting in extreme stress. The solution is to provide ventilation at the top of the hive by leaving the inner cover hole partly open or creating a small crack up there for moisture to escape. In addition, your colonies have suffered from nosema which, I think, is greatly increased by dampness. The combs of honey you took from the dead colony were covered with nosema spores. Bees can cope with a mild infection of nosema, but I think your bees got overwhelmed with it. You might want to use fumidil, but more important, I think, is to take steps to ensure dryness year-round by having hives in the sunlight, up off the ground, and ventilated in Winter. Snow, by itself, does not cause significant stress, nor does cold, unless there is also a lot of wind.

Purple Martin Majesty?

I have one hive of bees on a small city lot and would like to attract a colony of purple martins to that lot. Would these birds eat large numbers of the bees? Would the bees harass the birds? And will purple martins colonize a site close to a beehive?

Ronald W. McCrary
Pleasant Grove, AL

I receive many questions like these concerning purple martins. My own long-established colony of purple martins is at my cottage where I have no bees, and the birds feed over the water, so I have no first-hand experience on which to base an answer. It is my belief, however, that these birds would not significantly affect the bee population, and I am sure the bees would not bother the birds. Purple martins would not avoid nesting near beehives. The first essential in attracting a colony of purple martins is space. There must be no branch or other obstruction within at least 50 feet, and the more room the birds have to soar the better. My purple martin colony is a source of great joy to me each Summer. The martins migrate up from Brazil in early March, so housing must be erected before then. My colony will have completed that long flight by about the middle of April. Those interested in attracting these wonderful birds should write to the Purple Martin Conservation Association, Edinboro Univ., PA, 16444 for complete and valuable information.

Questions are eagerly solicited. Send them to Dr. Richard Taylor, Box 352, Interlaken, New York 14847 (not Medina) and enclose a stamped envelope for direct response.

Answers!

Richard Taylor

?Do You Know? Answers

1. **False** The eggs of *Braula coeca* are laid on the inner side of the cappings, and sometimes the walls of cells full of honey. Subsequent development is entirely beneath the cappings of honey cells and not among brood cells. The grub-like larva makes a tunnel of wax fragments which it gnaws from the cappings.
2. **False** The *varroa* mite was described in 1904 when it was first recognized in the brood cells of the eastern honey bee, *Apis cerana* on the island of Java. On its native host in southeastern Asia, the mite is not a serious problem. The first report of *varroa* mites attacking the western honey bee (a new host) was in 1962 on a sample sent to USDA, ARS in Beltsville from Hong Kong.
3. **False** Juvenile hormone within the blood of the honey bee larva obtained during feeding by the female mite stimulates the development of an egg cell and the maturation of a sperm cell. The first intake of blood from the larva is sufficient to allow two eggs to develop. The first egg is fertilized and the second egg is unfertilized and is laid about 30-36 hours after the first egg is laid. The fertilized egg will be a female mite and the unfertilized will be a male.
4. **True** Upon entering a brood cell, the *varroa* female begins to feed, piercing the skin and sucking the blood of the bee larva. Approximately two and a half days after the mite has taken its first blood meal, it lays a fertilized egg.
5. **True** Even though the female *varroa* mite initially feeds on the honey bee larva, by the time the eggs are laid and hatch, the immature mites feed and develop on the honey bee prepupa and pupa.
6. **False** The ether roll technique is one of several methods used to check colonies for *varroa* mites. Detection of a tracheal mite infestation is more difficult since dissection of adult bees and microscopic examination of tracheae is required.
7. **False** Each female *varroa* mite lays 2-6 eggs, one at a time at approximately 30 hour intervals. The tracheal mite egg is almost as large as the female so she can lay only one at a time as well. Each female mite lays 5 to 7 eggs within 3 or 4 days after entering the trachea and continues to lay eggs throughout her life.
8. **True** Female *varroa* mites produced in the summer live 2-3 months and those produced in the fall live 5-8 months.
9. **False** The bee louse is actually an insect, not a mite. The adult lice are reddish brown, wingless flies. Since they are insects they have three pairs of legs, not four as would be found with a mite.
10. **False** Wax moths are not a threat to strong, normal colonies. They are secondary invaders, entering weakened or dead colonies destroying unused or unprotected combs. Wax moths are unable to kill colonies.
11. **False** Unlike the honey bee tracheal mite, *Acarapis dorsalis* and *Acarapis externus,* are external parasites of adult honey bees.
12. **True** In both tracheal and varroa mites, the males develop faster than females. Tracheal mite: males 11-12 days, females 14-15 days. *Varroa* mite: males 6-7 days, females 8-9 days.
13. **False** Fluvalinate is not a systemic acaricide (absorbed by the honey bee, translocated through the body and obtained by the mite by feeding on the bee's blood). It is a contact poison that works when bees walk on the Apistan strip and pick up a tiny amount of active ingredient. The mites are killed when they contact the residue on the bees.
14. Queens
15. The success of *varroa* mite reproduction in drone cells is the result of several factors. First female mites enter drone cells in greater numbers than they do worker cells. Second, the reproductive output per female mite is greater in drone cells than in worker cells possibly due to physiological reasons. Third, the extended drone development time results in a higher number of mites reaching maturity.
16. Adult female mites- chelicerae are used for piercing the host's integument and sucking blood. Immature mites- chelicerae are used for piercing the host's integument and sucking blood. Adult male mites- chelicerae are used to transfer spermatophores with immature sperm to the female's genital orifice. Male mites do not feed, they only live long enough to mate with the females.
17. Reduced bee longevity.
18. Tracheal mites mate within the tracheal tubes (respiratory system) of the adult honey bee. *Varroa* mites mate within capped worker and drone brood cells in the hive.
19. E) 1984
20. E) egg, larva, protonymph, deutonymph, adult

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

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

Gleanings

DECEMBER, 1997 • ALL THE NEWS THAT FITS

At Federation Meeting

RESEARCHERS MEET

The 1998 American Bee Research Conference (ABRC) will be held in Colorado Springs at the Doubletree Hotel/World Arena on January 16-17. Everybody is welcome to attend, and researchers from all countries are invited to present papers. The conference is sponsored by the American Association of Professional Apiculturists (AAPA), and this year's meeting will be held in conjunction with the American Beekeeping Federation (ABF).

The purpose of the American Bee Research Conference is to provide an opportunity for scientists to present their current work to those present. A second objective is to get to know other honey bee researchers in an informal social setting as well as in a structure of scientific presentation and discussion.

Research presentation will be Friday 8:30 - 5:30, and Saturday 1:30 - 5:30. Please note the Friday morning session will be part of the American Beekeeping Federation general session, and the ABRC presentations should include topics of general interest to beekeepers in the audience. More technical presentations will be scheduled Friday and Saturday afternoons.

Exporting?

HONEY BOARD FUNDS PROGRAM

Applications are being accepted for the 1998 brand marketing program available to all U.S. honey exporters.

Funding is contingent upon honey exporters' adherence to Foreign Agricultural Service's regulations and National Honey Board guidelines. Participating firms are charged a five percent submission fee which is based upon the total amount of award received through the National Honey Board.

The National Honey Board oversees the brand marketing efforts. Under this program, the National Honey Board matches funds with companies who conduct overseas promotions of branded U.S. honey products. Promotions may be conducted in many countries throughout the world (excluding the U.S. and U.S. territories). The National Honey Board does not use honey industry assessments to manage the branded program.

Brand marketing has been a useful marketing tool for many U.S. honey exporters. Several participants of the branded program have experienced increases in international honey sales.

If you wish to be considered for the brand marketing program, you must submit your application by December 15, 1997. For a branded program application or more information, contact Sherry Jennings (800) 553-7162, voice mail ext. 14.

Bee Culture's Own Receives Manning Award

WINSTON, SLEASOR WIN WITH QMP

Research work on bees is rewarded with a major scientific development and a ton of honey which assists further research. Two professors, a beekeeper chemist and honey bee biologist, followed their natural curiosity in making a discovery which has eluded other scientists for years. Dr. Keith Slassor in the Department of Chemistry and Dr. Mark Winston in the Center of Pest Management, Department of Biological Sciences at Simon Fraser University, collaborated as a result of a passion for and a need to know more about honey bees and the royal message of the queen.

Their unique research, discovery and product of development is having a significant impact on bee management and fruit production. They were able to complete identification of the five chemical components of the queen bee mandibular gland pheromone. They then developed an appropriate blend of these components, now called (QMP), to create two commercial products with the trade names "Bee Boost and Fruit Boost."

Bee Boost acts like a pseudoqueen, exerting a fundamental level of control over bee behavior and governing many bee activities. The product can stimulate bee performance to greater pollen collection, calm a queenless hive, and improve other activities.

Fruit Boost has been demonstrated very successfully as a sprayable formulation applied to crops in bloom. It stimulates bees to forage in treated flowers with greater intensity. This increases the success of pollination and in turn dramatically increases crop yield and the weight and grade of fruit produced. It is most significant when applied on crops at the time competing vegetation is in bloom.

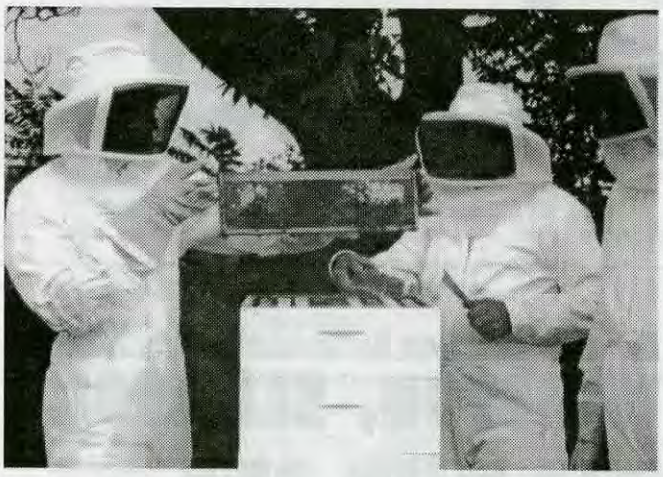
FARM/URBAN INTERFACE

A new Univ. of CA report offers information that could help the nation's largest urban population and a world-class agricultural system peacefully coexist.

Published by the UC Agricultural Issues Center at UC Davis, the report focuses on technologies and public policies that allow farmers to continue growing crops with minimal impact on their urban neighbors. The 80-page publication, titled "California's Future: Maintaining Viable Agriculture at the Urban Edge," is the summarized proceedings of a day-long conference. It includes the ideas and recommendations of land use planners, researchers, farmers, government officials and others concerned about problems on both sides of the farm-city interface.

"California's Future: Maintaining Viable Agriculture at the Urban Edge" is available for $15 from the Agricultural Issues Center, Univ. of CA, Davis, CA 95616. For information or to order call (916) 752-2320.

HERSHEY SCHOOL TEACHES BEEKEEPING



Milton Hershey School (MHS) provides on-campus opportunities for students to complete internships in beekeeping. Students work with a number of colonies located in the School's fruit orchards. As part of their training, students complete a variety of tasks, including product marketing, caring for and constructing hives, and collecting honey.

The beekeeping internship is offered to students as part of the School's Summer of Opportunities and Agricultural and Environmental Education (AEE) programs. AEE provides comprehensive hands-on agricultural education for MHS students in grades Kindergarten through 12 and includes a 500-acre land laboratory on campus with four learning centers: horticultural, animal, environmental, and dairy and foods processing.

Founded in 1909 by chocolate industrialist and philanthropist Milton S. Hershey and his wife, Catherine, Milton Hershey School is a nurturing and educating community of neighborhoods with a high-quality school for financially and socially needy boys and girls (K-12). Through the Hersheys' generosity, an endowment provides free of charge education, housing, food, clothing, and assistance with health care for all enrolled students.

NEW JAR

Featuring 12 flat facets, Berlin Packaging's distinctive new wide-mouth Dodecagon line can be labeled using conventional labeling equipment.

The wide mouth on these jars makes for easy spooning and fast filling. Available today in 120ml, 292ml and 465ml sizes (with 45ml and 680ml under development), the Dodecagon line is ideal for honey, mustards, sauces, jams, jellies and other various condiments.

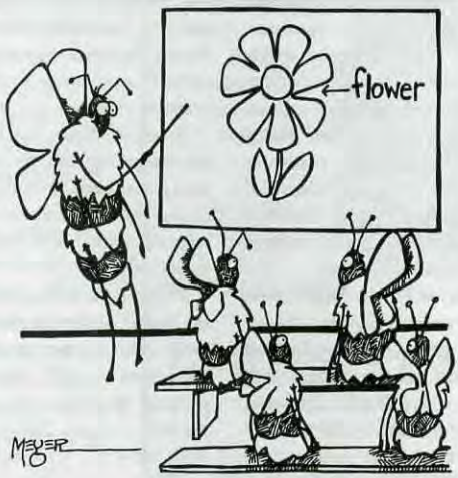
For information contact Berlin Pkg., Dept. 7040, 435 E. Algonquin Road, Arlington Heights, IL 60005.

USDA NEWS

RAISES FEES The U.S. Department of Agriculture announced (October 28) a proposal to raise current fees and add new fees for laboratory testing services of agricultural commodities. Thomas A. O'Brien of USDA's Agricultural Marketing Service said, "The increase is needed to strengthen the program's operating reserve and because of increased costs associated with analytical testing services. All tests listed in the fee schedule will increase by six percent. In addition, the hourly rate for analyses not listed in the fee schedule will increase from $34.20 to $36.26. Cottonseed chemist licensing fees and official cottonseed certificates fees will also be raised by six percent. Laboratory fees for aflatoxin analysis will be adjusted according to the procedure used. O'Brien said, "Like other voluntary user-fee programs, USDA provides analytical testing services to facilitate marketing and quality standards of agricultural commodities in domestic and international commerce."

NAMES NEW AMS DIRECTOR Agriculture Secretary Dan Glickman named (October 24) Enrique Esquivel Figueroa as the new administrator of the U.S. Department of Agriculture's Agricultural Marketing Service (AMS). Glickman said, "I am delighted to announce the appointment of Dr. Figueroa to head AMS. His knowledge of economics and trade will serve this Department well as we move forward with our strategic goal of expanding economic and trade opportunities for agricultural producers and other rural residents." As AMS administrator, Figueroa has responsibility for facilitating the strategic marketing of agricultural products in domestic and international markets. Previously, he was named by Glickman to the North American Free Trade Association Advisory Committee on Private Commercial Dispute Resolution Regarding Agricultural Goods. Figueroa comes to USDA from Cornell University where he was an associate professor in the Department of Agricultural, Resource and Managerial Economics since November, 1992. He was an assistant professor in Cornell's Department of Agricultural Economics from November 1986 to November 1992.

EXAMINES ORDER The U.S. Department of Agriculture has extended the comment period for reopening the public hearing on the proposed federal marketing order for pistachios grown in California, Arizona, Nevada, new Mexico and Utah from September 1, 1997 until January 31, 1998. Lon Tatamiya, administrator of USDA's Agricultural marketing Service said, "USDA extended the period in response to an industry request. USDA will reopen the hearing if it determines that additional evidence would be forthcoming relating to the economic and marketing conditions that justify the need for a pistachio marketing order as well as the economic impact of the proposed order on the industry."



APIMONDIA IN '99 IN VANCOUVER

Canada, a world leader in beekeeping and bee research, invites beekeepers from throughout the world to Apimondia'99, the 36th International Apicultural Congress.

Set on the waterfront of Vancouver Harbor from September 13-18, 1999, Apimondia'99 will use the congress theme—"Beekeeping in the New Millennium"—to explore all aspects of bees and beekeeping. The modern Vancouver Trade and Convention Centre will be the focus of all activities, including ApiExpo'99, the popular trade show with up to 200 displays of equipment, honey and other bee products, books, and related material. Plenary sessions throughout the week will feature high quality presentations by invited speakers on all major aspects of apiculture. Smaller symposia, lecture series, and poster presentations will enable more focussed topics to be explored. Participants will make new friends from throughout the world while socializing with old acquaintances during the cultural events, on the day-long technical tour, and through informal interactions. There will also be contests for those interested in that aspect of bee lore.

Don Dixon, Chair of the Canadian Organizing Committee for Apimondia'99, believes that "Apimondia'99 promises to set the standard for beekeeper conventions in the 21st century. Our challenge is to present up-to-date information of value to beekeepers and bee researchers alike. This meeting will provide something of value to everyone."

Apimondia is the International Federation of Beekeepers' Associations. In addition to publishing books and organizing technical symposia, Apimondia sponsors international beekeeping congresses every two years. At the Centennial meeting of Apimondia in Antwerp this September, President Raymond Borneck of France invited congress participants to Apimondia'99 in Canada. The last Apimondia meeting held in North America was in Mexico in 1983.

Vancouver was selected as the venue for Apimondia'99 both for its natural beauty and the high level of services available. Overlooking an arm of the Pacific Ocean and the mountains to the north, the Vancouver Trade and Convention Centre is a state-of-the-art meeting facility that was designed to look like the cruise ships that regularly dock alongside. Directly adjoining the convention centre is a food fair with 30 restaurants and stores. The city of Vancouver has become a prime destination for tourists from throughout the world. Visitors can safely stroll through busy downtown shopping districts, walk in the gardens of nearby Stanley Park, take the ski lift to the top of Grouse Mountain, or cruise Vancouver Harbor. A wide range of hotel accomodations are available for congress participants. Tourism opportunities abound in the Vancouver area and the rest of Canada. Pre-and post-conference tours will provide the opportunity to gain insights into North American beekeeping.

Canada welcomes you to participate in Apimondia'99! The second circular with detailed information and registration forms, scheduled to be sent by Fall, 1998, can be requested by writing: Apimondia'99, c/o Venue West Conference Services, #645 - 375 Water Street, Vancouver, B.C., Canada, V6B 5C6.

For more information contact:

Dr. Gard W. Otis, Publicity Chair, Apimondia'99 Organizing Committee, Department of Environmental Biology, University of Guelph, Guelph, Ontario Canada N1G 2W1 Telephone: (519) 824-4120 x2478; FAX: (519) 837-0442; gotis@evbhort.uoguelph.ca

Mr. Don Dixon, Chair of Apimondia'99 Organizing Committee, Provincial Apiculturist, Manitoba Agriculture 204 -545 University Crescent, Winnipeg, Manitoba, Canada R3T 5S6 Phone: (204) 945-3861; FAX: (204) 945-4327; ddixon@gov.mb.ca

Dr. Mark L. Winston, Scientific Program Chair, Apimondia'99 Organizing Committee Department of Biological Sciences Simon Fraser University Burnaby, B.C., Canada V5A 1S6 Phone: (604) 291-4459; FAX: (604) 291-3496; winston@sfu.ca

NEW TOOLS FOR AG INTERNET USERS

Agri-Publications, Inc. of Tifton, Georgia has introduced two new information products for internet users interested in agriculture. The first is AgriSurf!, a web site that is the largest searchable agricultural information right to users' email inboxes.

Agri-Publications, Inc. launched these information products in order to help internet users reduce time and frustration in locating relevant information on the web. The internet is one of the prime agricultural information sources for today's farmer. If it's related to agriculture, it's out there somewhere on the World Wide Web.

The internet is a great resource, but it isn't always easy to use. Searching for that little piece of relevant information can be like trying to find a needle in a haystack. You know it's out there somewhere, but it may not be worth your time, effort and frustration to get to it.

To combat this problem, the internet community has long used indexes and search engines. AgriSurf! is the most comprehensive search index for agriculture. The free service provides links to thousands of ag sites, all catalogued and listed under appropriate indices for easy access.

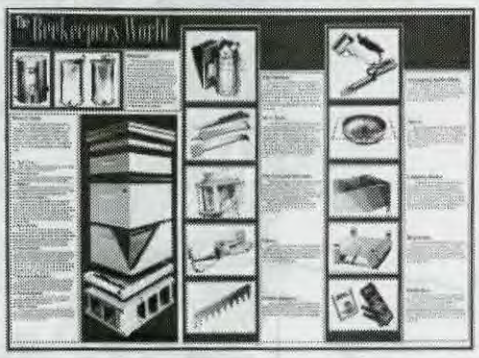
"AgriSurf!'s custom-written software continually checks the pages it has indexed to weed out 'dead' links and to collect other information such as how quickly the sites download, "says Stuart Pocknee, who developed and heads the AgriSurf! service. "Each site is manually reviewed to ensure that only premium agricultural sites are included."

Pocknee says that AgriSurf! staff are currently reviewing and indexing a database of well over 20,000 agricultural sites. "Already, AgriSurf! contains links to more agricultural sites than the two largest mainstream web indexes combined," Pocknee says.

In addition to the search index, Pocknee developed a free customized newsletter service, The AgriSurfer, that helps uses keep abreast of new information appearing on the web in their specific areas of interest. The AgriSurfer site offers a weekly email newsletter which includes pictures and hotlinks to keep users up to date on all the latest ag information in cyberspace.

"Better yet, it is totally customizable so that you get more of what you want while avoiding all the irrelevant chaff," Pocknee says. "In the spirit of the internet, neither AgriSurf! nor The AgriSurfer require any subscription fee. To take advantage of them all you need is an internet connection and an email address."

NEW CHART



Maxant Industries proudly announces the release of its newest educational wall chart, "The Beekeepers World." This beautiful, full color, 22½" x 30 ½" poster shows an exploded view of a hive explaining various components used, as well as the tools needed for beekeeping and honey production.

The perfect tool for a beginners course or giving a talk on beekeeping to any group! This chart, in conjunction with the "Life Cycle" and "Beekeepers Year" charts, makes for a well rounded and informative presentation on beekeeping.

At your dealers or write: Maxant Ind., P.O. Box 454, Ayer, MA 01432.

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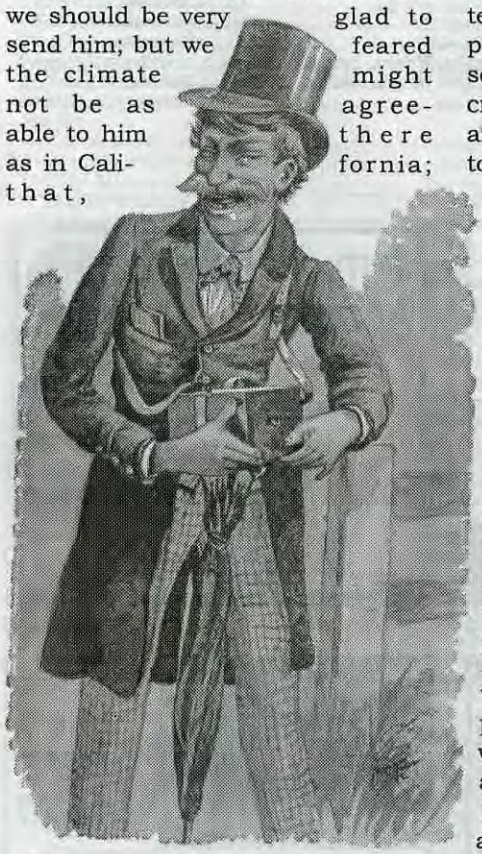
BOTTOM ... Cont. From Pg. 64

While in California he wrote that illustrated serial further depicting California life entitled Beekeeper Fred Anderson; or, the Mystery of Crystal Mountain. It was a story of no mean order; and elicited the praise of hundreds of our readers.

In the Summer of 1901 Rambler wrote he had another "itching," and that was to go to Cuba, and asked what I thought of a trip to gather up materials for Rambles. I wrote back we should be very glad to send him; but we feared the climate might not be as agreeable to him there as in California; that,



THE RAMBLER IN CARICATURE.

while the absolute temperature might not be greatly different, the humidity, mosquitoes, etc., might make living very uncomfortable if not dangerous. I urged him to go, but suggested that he stay only during the Winter, and go back late in the Spring or early Summer. At that time he was at Reedley, California, where he was taking care of the bees of J.C. McCubbin. His apiary in Southern California had not done well, and he had, therefore, gone northward where the seasons were less uncertain.

He went to Cuba in November, 1901. It was not long before he became interested in the possibilities of Cuban beekeeping, and decided to start an apiary. He purchased 100 nuclei, as I have already related, increased them to 300, and procured a large crop of honey besides. I was not aware that the surrounding conditions were so unhealthy, and probably he was not. But the dreaded malarial mosquito in the locality apparently got in its deadly work, and the end came all too soon.

The last correspondence I had with Mr. Martin was to the effect that the pressure of work would not permit him to go out and get more material for rambles, but that he would prepare a series of articles telling something of his experiences in increasing 100 nuclei to 300 colonies, and how he managed last Summer to secure that big crop of honey. And this reminds me that Mr. Martin was a genius, handy with tools, and as adept at contriving. When I looked through his den in California I was surprised at the number of little devices he had made.

None of his inventions ever came much into prominence for the reason that he was not a man to push any ideas of his own. But I recall a glossometer that he made, for he had been working on that problem when a comparatively young man – the problem of measuring bees' tongues – for he early saw that some bees could reach further than others; and the result was, he made perhaps the most perfect measuring-instrument that was ever devised. It was described and illustrated in our issue for May, 1882. Another invention of his was a honey-strainer which had more than ordinary merit; but owning to the difficulty of making it in a wholesale way, at a price that would be in the reach of all beekeepers, we did not put it before the public. A little later, as our friends will remember, we illustrated and described his Rambler jouncer – something which I consider useful and really good. It is a machine for jarring bees out of supers when bee-escapes are not used. We made a few of them, and tested one of them ourselves and found that the jouncer was all that Mr. Martin had claimed for it.

Mr. Martin had told us in some of his last letters that there were some inventions which he wished to show to the public, and these were to be illustrated and described in a series of articles which he expected to write when he had a little more time. But death caught him, and we shall never know what these later ideas were.

Perhaps no single writer who ever wrote for *Gleanings* ever called forth more praise from our subscribers than the Rambler. His seriocomic writings, filled as they were with valuable hints, and the exact portrayal of every locality through which he traveled, made him not merely a funny man, but a dignified correspondent who could and did give us much of value through his writings. While *Gleanings* mourns his loss it mourns it no more than every subscriber who has followed him through these years; and when the news was flashed back from Cuba that the Rambler was dead, I felt as if a near and dear friend had passed away; and I never met any one who had come in contact with the Rambler who did not hold him in exactly the same high esteem. When I gave the news to our artist Murray when in Cleveland last, it seemed like a severe shock to him; for Murray and the Rambler have been in close touch with each other for about 25 years. When they met for the first time in Cleveland, in 1891, they were like old friends, kindred spirits that will be forever kindred as long as time lasts.

The funeral of the late John H. Martin was held from the Baptist church at Hartford, NY, his old home place, Sunday, January 25, at 11 a.m. The other churches of the town united in the services to pay respects to his memory. Rev. J.A. Parker, of the Congregational church, of which Mr. Martin was deacon, preached the funeral sermon, assisted by Rev. H.W. Hakes and Rev. H.E. Hoyt. The four deacons and four other friends of the Congregational church acted as bearers.

Mr. Parker chose for his text James 4:14: "For what is your life?" The words were suggested to him from a letter which Mr. Martin wrote to the C.E. society on their 15th anniversary, which was held August 17, 1902. Mr. Martin was at one time President of the Society, and also superintendent of the Sunday-school for a good many years. His friends laid him in his last resting place by the side of his wife in Morningside Cemetery. BC

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John H. Martin was born in Hartford, NY, December 30, 1839, and died at the Hospital Reina Mercedes, Havana, Cuba, January 13, 1903. About a month ago he was seen by our friend Mr. Danzenbaker, at his cabin in Taco-Taco. At that time he appeared to be reasonably well, and seemed like the John H. Martin of old, bubbling over with his effervescing jollity and kindly good nature. But little did he think then that the end was so near. Soon after, the Rambler told Mr. Moe, one of his neighbors, that he was not well, and that he would have to go to Havana, to some hospital where he could get the best care. Mr. Danzenbaker, Mr. de Beche, and others, called on him every day thereafter, only to find that he was a very sick man. He began to rally, and seemed better until pneumonia took hold of him, with the results above stated.

Thus our friend has gone to meet that dear companion his wife, from whom he has been separated these many years. Notwithstanding the light vein of humor that pervaded his writings there was in his heart a cloud of sorrow that seems never to have left him entirely – sorrow for the long lost loved one of his younger days. Mr. Martin was an earnest Christian and we have every reason to think he has gone to meet that dear one, where fever, where sorrows, where pains, where heart-longings never come, and where life blossoms out into full fruition.

Mr. Martin began writing his Rambles in June, 1888. He sent us a batch of three or four articles, giving an account of visits among some of the prominent beekeepers of Northeastern New York. There were some rude pencil-sketches representing himself and his hosts, and in the note accompanying he said he doubted whether we could use the stuff or not. After reading the manuscript through I remember writing him that he needed to make no apologies – the articles were good, and had been passed in to our printers. The rough sketches, a prominent feature of the Rambler articles from the very first, were turned over to R. V. Murray, of Cleveland, to work over for publication. Little did I know then that he would keep on writing for us, traveling clear across the United States, and finally land in Cuba. But such was the beginning of his series of Rambles.

Mr. Martin gradually widened the circle of his visits (around Hartford, NY, his old home), taking in some surrounding states. As time went on he finally wrote us that he had an itching to go to California, and asked if we had any choice as to which portion of the country he should travel through before stopping at the Pacific coast. Our preferences were given, and the trip west was begun.

Our older readers will remember how interesting these articles were. He cartooned all the fads and foibles of beekeepers as he visited them. He was always depicted with a camera, an umbrella, stovepipe hat, striped pants, and long frock coat. Like "innocents abroad" he was constantly blundering into new fields at unexpected times, and how his visits were received he graphically portrayed in these columns. I should like, if space permitted, to give a few samples from his humorous writings, but space forbids; but a few illustrations that were worked over by our artist, Mr. Murray, will give some idea of the character of the Rambler and his writings as he went abroad over the land with his pencil and Kodak. Sometimes, as will be seen, fortune smiled on him, and sometimes he "struck it rich;" but sometimes the cruel hand of fate rested heavy on him.

When he arrived in California he went through the length and breadth of the land, and everywhere he went he made friends. His caricatures never offended, but, on the contrary, they set forth some real conditions as they actually existed, showing beekeeping as it was in the great West. In my late trip through California I everywhere heard kindly words spoken of his writings; and I learned how true and faithful all his descriptions and portrayals were.

Perhaps it may seem a little inappropriate to put in an obituary a comic caricature of the man who has just left the activities of this world; but the natural humor of his make-up were so intimately interwoven with his real life that they can scarcely be separated from his history. There were hundreds and hundreds of cartoons made. The Rambler would outline the sketches, and Murray put them into form.

Mr. Martin, although he was known to be beekeeping readers as a rambler, would between times settle down in a little cabin all alone by himself in the mountain or on the plain, where he could manage from 300 to 400 colonies. He seemed to love solitude and nature. He loved the bees; and when not actually rambling he would be getting in crops of honey.

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J. H. Martin, The Rambler