FEB 1999

Bee Culture

COVER STORY

Land Based Honey Production ------ 28

PLUS...

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

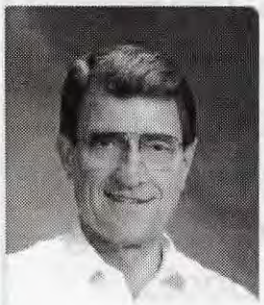
FEBRUARY 1999 VOLUME 127 NUMBER 2

FEATURES

COVER

Growing your own is the goal of many beekeepers, but too often practical agriculture tends to get overshadowed by the science. Our feature story this month brings us back to the earth, as it were, with practical information on weed control, soil preparation and the plants to grow.

photo by Henry Hiemstra



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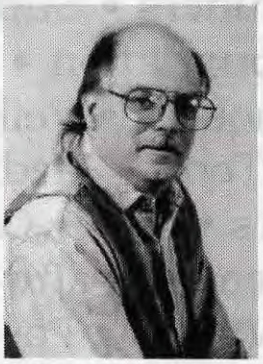
Publisher



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INNER COVER

I visited my daughter Jess for a few days between Thanksgiving and Christmas. She lives in Portland Oregon with a couple of friends. Brandon is a musician on the edge of MTV stardom. His music is loud and aggressive. Amber is a hair stylist with exotic tastes in hair styles, which go hand in hand with Brandon's music. Jess enjoys and appreciates both. Such are the lives of parents and children. Different.

After high school Jess tried a variety of things, but found a real liking for making good food. This led to an entrance level job in one restaurant doing prep work, a mid-level job in a corporate-America size Italian food chain, and now as a breakfast cook in a four-star hotel restaurant. Climbing the ladder one rung at a time. Does a father proud.

Since Jess lives on the west coast and I don't, I've followed her career more by phone than personal observation. My loss. My recent visit changed that, and gave me some insight into two professions I had essentially no knowledge of.

First, Amber's job. People who cut hair for a living use a multitude of instruments, almost all of which have sharp edges. Like many jobs, Amber must find the right mix of efficiency (how many people can you serve in a day), and personality (the customer is always right, and ya gotta be nice). This mix combines using sharp instruments at high speed with attending to, and listening to, the person in the chair.

If attention from one is drawn to the other, by Amber or any of the thousands (millions?) of people who do this, accidents happen. Nicks, cuts, gashes and even major damages occur. Amber has scars and occasionally bandages as do many in her profession. Ouch.

Breakfast cooks, and most cooks for that matter, deal with instruments, too, and many of them are razor sharp. Chopping, cutting, carving and trimming all involve an intimate association of fingers and knives. Accidents happen.

Couple this with hot stoves, hot griddles and hot pan handles. Burns are, if not common, certainly not uncommon. Cooks develop fingers and hands almost immune to these outrages. Cuts heal quickly, callouses form, burns seldom develop blisters and those that do retreat quickly.

Is there a reason I'm telling you all this? Yes, there is.

Most of us would have trouble enduring these assaults on a routine basis. Or so it seems, but most of us routinely deal with the stings and arrows of handling live venomous insects.

The most often asked question of beekeepers is – in one long breath – "How often do you get stung?" followed by "Doesn't it hurt?"

Of course each of us recite our own stock answer. But now you can say, truthfully, "Yes, I do, and it smarts a bit, but it sure beats being a cook or a hair stylist. They get cut and burned for a living."

Jess and Amber please be careful. Brandon, wear ear plugs.

•

A while back I cautioned readers about what to expect this Winter relative to the weather. I based this warning on both long range forecasts by those in the know in the weather forecasting business, and my own experience with El Niño, and La Niña. Without boasting, much, the predictions were dead on.

Continued on Page 40

Edges, The Weather & News To Use

Don't Forget To Get Your Newsletter Entered Today In *Bee Culture's* First Ever Newsletter Contest – See January Issue For Details. Win $$$ For Your Group. Be The Subject Of The Feature Article In Our April Issue.

KEEP IN TOUCH

Write: Editor, 623 W. Liberty St., Medina, OH 44256
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MAILBOX

Thanks, Suppliers

I am also not big enough, reference to *Not Big Enough*, Rhonda Keim, Sept. 98.

Like Rhonda Keim, we also need supplies but are not to the point where we need or can afford a $250 order at one time (Berlin Packaging, Dec. 98).

Where oh where would we be (bee!) without bee supply companies to supply our needs? *Beekeeping, A Practical Guide* by Richard Bonney, states probably 90 to 95% of beekeepers in this country are probably considered hobbyists with one or two or more hives. Maybe the other five to 10% can enjoy the savings of a $250 order of Terra patties or Apistan strips or jars. I am sure there are many hobbyists (90 to 95%) who wouldn't appreciate being pushed aside and ignored because we are "not big enough". We receive lots of good, free catalogs from reputable companies with no minimums who care and accept our dollar while supplying us with quality products in the quantity we need. Any time, from my experience, when a company starts stepping over dollars to pick up dimes, they are stepping toward the end.

All the while, keep your smoker lit, your veil on tight and your chin up so you can take another square hit. Keep up the good work *Bee Culture*. What a fine magazine!

Richard & Linda Holsopple
Hooversville, PA

Cold In Canada

The November 98 article by Brad Kurtz is interesting but incomplete and although maybe applicable in Ohio is not in Canada and colder climates. We have to import expensive bees from NZ or Australia due to U.S. border closure because of mites so overwintering is an economic necessity.

In this province Winters are long damp and cold. For 15 years I have managed 90-95% survival from October to early May without Fall sorting of hives using a tar-paper wrap of colonies in long rows, off the ground on foam insulation and with a plastic air bubble layer on top. This makes a dead air space, not an insulated space, but the most important feature is the Shaparew inner cover ventilator. Details have been published in *Gleanings* Nov. 82, *American Bee Journal*, 80, 85, 86 and in *Canadian Beekeeping*.

The above are required reading to overwinter; the covers work with no more moldy combs or dead colonies and give fantastic overwintering results.

I enjoy your publication. Keep up the great articles.

R.M. Mundle
Charlottetown, PEI, Canada

The Future

Wow, we are almost there. The industry has stated loud and clear: We want production research. We want quality assurance. Following the process, the industry will have a few months to comment, rules will be formulated, more comments, ample opportunity for every one to contribute to a referendum perhaps in a year.

It is true, speed bumps are in the path, but, the leadership of all credible groups in the industry have demonstrated in word and deed the broad based support for this effort.

"These are the hard times in which a genius would wish to live. Great necessities call forth great leaders." Abigail Adams, 1790, in a letter to Thomas Jefferson.

This is a great opportunity. These are hard times.

It is true, that at each of the state meetings, a few, and I do mean a few, make a noisy tactless point of seizing the 'I can't' agenda. 'I can't' . . . and then fill in the blank . . . 'support this proposal, believe this will do any good, believe the packers will pay their part, believe this will solve anything, believe this will promote only U.S. honey, believe any of the research this group will do, support that honey board staff' . . . it goes on.

'I can't' never accomplished anything. 'I'll try' has been the hallmark of leaders since before 1790.

In the video being shown at meetings, we see a group of 'I'll try' leaders applying honest effort to make this industry a more profitable place to work. Not a zero sum game of the producer has to loose, for the packer to gain. A growing marketplace of expanded uses for pure honey. The producer wins when, for example, Robitussen introduces a Honey Cough syrup; so does the packer. We all sell more honey.

I hear it in the halls at meetings; it is a world view of zero sum attitude: You must loose for me to win. This is wrong. The negative few are a noisy lot, and after a while, one might be sucked into the zero sum game of loose/win. I choose to not believe the noise.

I choose to believe it is time to put our money where our mouth is regarding production research. It is an embarrassment to see how little our industry contributes to bee research; and how loudly we whine to get into everything for nothing. It is time to put up.

I choose to believe it is time to stand up, as an industry, to defend our image of purity, and healthy and good for you. Jim Powers was just 25 years ahead of his time when he volunteered $10,000 for the honey defense fund. In 1998, the technology finally exists to defend pure honey against funny honey.

It is past time to get going; but the opportunity is finally here. It's time for the 'I can'ts' to put a sock in it. What do they stand FOR?

Promote U.S. Honey? Spare me the rhetoric. Show me a coherent

MAILBOX

strategic plan. What is the mission? Pounding of chests and stamping of feet does not solve problems. "We will meet once a year to bitch and moan about everything!"

What will it cost? How do you differentiate your message from 'other honey'? What makes you think for one second the consumer cares? Have any consumer use and attitude surveys backed up the claims? This is just 'feel good' posturing. What are the controls? Who is responsible? What are the performance guarantees? Will peer review be applied? Where is the money? Who is writing the contracts? Where is the representation? Who is going to handle the money? Oh, really?

Give the sordid record of the 'I can'ts' I go with the 'I'll try' group.

Now, a bit of a reality check. The U.S. market is about 350,000,000 lbs. But some producers, some producer/packers, and some packers play games, so assessments are on about 90% of that figure. About 315,000,000 lbs. @ .015/lb $4,725,000.

That seems like a lot of money; but it's not. Proctor and Gamble spends over Five Million dollars a day on advertising alone. We will be trying to do a credible job of quality assurance, production research, advertising, public relations, food technology, new product introduction, industry relations, hiring and retaining high quality staff, and enduring the expensive oversight of USDA. Any one of the programs above could occupy five million dollars. Board members confront this reality every time the budget is approved, reviewed or amended. For this reason, every month, each board member receives a complete financial condition report. This honey board is the single most effective tool this industry has to promote itself. The proposals to add production research and quality assurance programs make sense.

John Miller
Newcastle, CA

Keep It Up

Thanks for all the good articles, pictures and ads in your magazine.

I have just finished reading the November issue and can't wait until the December one comes. The cover picture of Sweet Clover got my attention.

I would like the mailing address of Mr. Charles Hofmann or even better for him to write an article on Sweet Clover. Where to buy seed, how and when to plant.

I can't find seed in North Carolina. I bought seed two years ago and planted in September, but none came up.

Any help would be great.

Ray Cashion
Asheboro, NC

And The Winner Is ...

And the winner is Rick Sutton's Clover Honey from Rick Suttons Apiaries, Lancaster, KY.

I'm winding up a career in sales and living in town with nervous neighbors. But very soon will move out of town and change from a beekeeper wannabee to a beekeeper.

However, during the year my wife and I have made many trips, business and pleasure, over much of the U.S. sampling honey and looking for quality as we went.

Rick's was the winner of the "Wieland Best" trophy for 1998.

It looks good, a finger dab dissolves slowly with a subtle sweetness, and its delicious with or without peanut butter on a sandwich.

I can't say much for the label, but we weren't judging them.

Congratulations again to Rick and his bees for a truly outstanding product.

Dan Wieland
Davenport, IA

Taste; Moving Bees

Very much enjoy my monthly magazine from you folks. Especially enjoy Richard Taylor, and am very sorry that he's cutting back, but I understand.

On his latest subject of honey color, I agree with what he has said in the December article, but I wish to add one observation. I produce only Spring honey from here in upstate South Carolina, so that means mostly a combination of predominantly poplar and blackberry (and I suspect that that's mostly poplar). I have a beekeeping buddy, Jerry Mullinax, who produces in much the same manner across the county, maybe 15 miles as the bee flies, except that he's much closer to swampland than I am. We generally blend all extractions of our own (he keeps his separate from mine), except for a few very special frames that each of us chooses to extract separately. His honey has been light milder, with a little bite, and mine is a darker amber with a little fuller, smooth flavor. This past Spring was very wet when the poplar was in bloom, and my honey came out rather light, while his came out the color that mine usually does. This year my honey had the usual full flavor, with perhaps a little bite to it. His was dark, but still pretty much had a milder flavor. So we have come to the realization that there is probably little or no relationship between color and flavor. You can't count on a light honey to be mild, nor is a darker honey necessarily strong-flavored.

On the subject of moving hives, we are aware of the admonition of "less than two feet or more than mile." But we have developed what we call the "Midnight Ride" method of moving individual hives that, for whatever reason, are simply poorly located and need to be moved, for example, a couple of hundred feet. Around dark, close the hive entrance with screen of some sort, then load the hives(s) in the back of the truck. Ride around for a little, being sure to go at least a few miles away. Then return to your apiary and set the hive in its new location. The bees, between the jostling around (gets their attention) and the few miles' displacement during the trip, come out the next morning, reorient, and adapt to their new location.

Hope the foregoing spark some discussion or create some solutions for others. Keep up the good work!

Fletcher G. Hawkins
South Carolina

Continued on Next Page

MAILBOX

Concerning Trade Talk

I have some comments to make concerning Mark Winston's column *Trade Talk* in the December issue of *Bee Culture*. Mr. Winston displays a remarkable naivete regarding the present situation in the U.S. beekeeping industry. Specifically, Mark bemoans so-called "whining and complaining" by U.S. beekeepers with regard to packer price manipulation, unfair trade practices, government free trade policies, and the editorial practices of the national bee press. At the same time he acknowledges there is "some truth to . . . these complaints" and that these complaints are positive in that "we're finally beginning to see constructive debate." Furthermore, he goes on to plug the proposed NHB amendments based on one section which authorizes a NHB directed adulteration testing program.

"Constructive debate" would not occur if it were not for U.S. beekeepers focussing attention on industry problems. It is imperative to quantitatively identify the nature and extent of our problems if we are to address them in an effective manner. Unfortunately this sometimes doesn't happen. For example, there is much loose talk concerning the large amount of adulterated honey in the market. The large processors would have us believe it is a huge and dangerous situation and have put forward some impressive figures to make their case. In fact these figures are unsubstantiated and, in my opinion, inflated for political purposes relating to the upcoming NHB referendum. My sources within the FDA *without* exception believe that the packer provided adulteration figures are grossly exaggerated.

Finally, to promote the NHB amendments based on one section, which has gut-level appeal to beekeepers, without putting it into context, is irresponsible and not constructive. When the NHB amendments are examined in their entirety they fail to provide equitable benefits to the assessment payers.

Joe Rowland
Owego, NY 13827

THE WISE GUY

There is a train wreck coming, and some of us will not survive the crash! There is a new parasite that is as deadly as any we have ever faced. It lives off the weakest members and will even weaken the stronger ones over time. The problem with these parasites is that there is no chemical treatment available. They also are invited guests, so you know you got 'em but you just can't get rid of them.

One good thing about this parasite is that you can view it with the naked eye. I believe it has one major weakness that will make the disease treatable. That weakness is greed. Yes, you have guessed it – the parasite is Honey Packers! I believe their negative impact on the honey business today rivals the destruction that the mites have done.

Our biggest problem is that we trusted that they had the industry's best interest in mind, but they placed greed ahead of anything else. Also, they believe that they do not need any relationships with beekeepers to survive.

Example When honey prices were rising, there were people who had contracted with honey packers to sell at a price of less than 70 cents per pound. Those beekeepers honored that price even though the market price went above 90 cents per pound. Now you make a verbal contract with a packer to sell your honey at 70 cents per pound. And, if the price is less than that, they won't return phone calls or tell you that they can't pay that much because the market changed. It seems this isn't a two-way street.

Or they tell you that they need some higher grade of honey to bring the imported honey they have purchased up to a level that makes it saleable, but offer you 7 cents per pound *less* than they paid for the unsaleable imported honey.

Another good one is with the large crop coming from Canada, the honey has a lot of "rape" honey, which makes it crystallize quickly. The packer wants to "thin" that honey with U.S. honey, but they want to pay you less than the imported honey they can't sell.

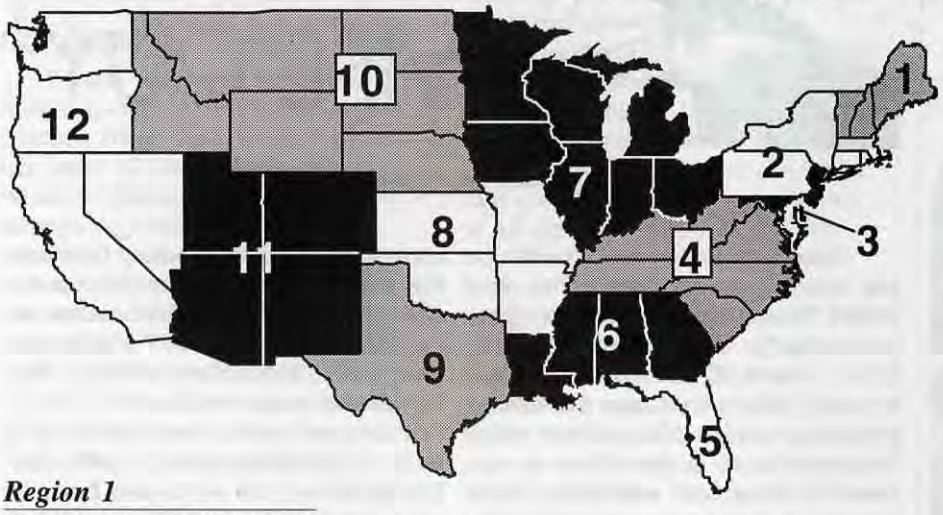
I don't want to sound like Chicken Little here by telling you the sky is falling, but, folks, look around. The average age of beekeepers is still increasing. There has been little new blood come into our business. The colony count nationwide has decreased. The bee pasture is disappearing at a steady rate. You are now required to be away from home for weeks at a time to chase a honey crop. You cannot find help at all, plus you have no long-term help because they don't want to be away from home. Now the price of honey is at an all-time low, but on the shelf we see prices the same as when we were getting 75 cents per pound.

This new parasite is only one more problem in our industry. How do we treat it? I believe there are some good ones and there are some bad ones, so you must figure those out for yourself. If they continue to keep trying to steal each other's business they will kill themselves, but we also will go. I believe you must market your product to the public. How? Next time let's discuss that.

Wise Guy

Bee Culture invites comments to this critical column. Much of what is *said* here is *said elsewhere*, but seldom published. Take this bull by the horns and give us your opinion.

FEBRUARY – REGIONAL HONEY PRICE REPORT



Region 1

Bulk prices up a bit this month, finally. Wholesale and retail steady. Demand at retail steady to increasing slightly. Package and queen purchases increasing this Spring, but caution about queens apparent.

Region 2

Bulk prices increasing slowly, but wholesale and retail steady. Demand at retail mixed, but mostly steady. Buying bees high on everyone's list, and lots of queens being purchased. Feeding this Spring being done by most.

Region 3

Bulk prices up just a tad this month, but retail and wholesale steady. Demand at retail steady to increasing just a little. Expansion plans mixed, but queen purchase plans strong.

Region 4

Prices steady across the board this month, no or little changes. Retail demand mixed, but generally steady to increasing a bit. Package and queen purchase plans strong, with big demand for new queens this Spring.

Region 5

Barrel prices down, pail prices up, wholesale and retail steady. Demand slow but unchanged at retail level. Uncertainty rules when considering buying bees. Queens maybe, but jury still out on expanding.

Region 6

Pail prices steady, bulk and wholesale down, retail steady. Retail demand is steady to increasing since last month. Probably as many people produce bees as buy them here, so sales mixed.

Region 7

Pail and bulk prices down, wholesale up and retail down. Retail demand mixed but more steady than down. Package and queen purchase plans strong, especially packages.

Region 8

Pail prices up, bulk and retail down, wholesale steady. Demand at retail only steady and decreasing just a bit (even with lower prices). Package purchases slow, but queen demand strong.

Region 9

Pail prices up, bulk down, wholesale steady and retail down. Demand at retail optimistic, and up. Queen purchase plans strong, with package plans not far behind.

Region 10

Pail prices up, bulk down, wholesale and retail steady. Retail demand only, and barely steady. Queens and package demand high, with expectations of expansion strong.

Region 11

Pails and bulk up, wholesale steady and retail, both sales and demand, down. Expansion plans muddled as pollination contracts and honey prices will deliver the ability to purchase.

Region 12

Bulk, pail and wholesale prices up, but retail barely steady. Retail demand steady to increasing slightly. Pollination fever has already forced many to evaluate expansion, but queen purchases especially seem strong.

	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	59.55	69.50	68.00	69.00	75.00	54.00	42.54	56.69	67.00	66.69	70.00	58.50	34.20-105.00	60.86	59.55	69.45
60# Amber	55.44	62.17	65.00	60.50	54.00	52.50	41.34	51.00	67.00	55.05	64.67	55.75	33.00-75.00	57.16	57.45	66.21
55 gal. Light	0.74	0.76	0.78	0.74	0.65	0.66	0.64	0.64	0.64	0.62	0.74	0.72	0.56-1.50	0.75	0.67	0.89
55 gal. Amber	0.71	0.74	0.81	0.77	0.53	0.61	0.62	0.91	0.61	0.61	0.66	0.70	0.52-1.50	0.71	0.62	0.84
Wholesale - Case Lots																
1/2# 24's	29.26	27.48	31.21	32.89	31.21	31.00	28.94	31.21	30.00	31.21	27.75	31.47	20.40-43.20	30.04	30.08	29.62
1# 24's	42.09	40.42	43.20	45.26	44.50	41.25	41.90	39.44	45.00	44.00	41.90	45.48	20.50-62.40	42.91	43.72	43.45
2# 12's	38.72	38.39	42.60	41.23	44.00	38.30	39.91	38.37	40.00	37.50	32.30	37.95	27.00-52.80	39.57	38.78	38.48
12 oz. Plas. 24's	35.49	36.21	40.80	37.02	35.53	27.20	36.35	34.91	38.10	38.40	33.10	35.84	16.40-54.00	36.19	36.93	35.68
5# 6's	40.72	43.13	48.00	47.75	41.75	40.00	39.01	40.50	48.00	41.25	33.28	37.47	27.00-67.50	41.49	41.91	40.98
Retail Honey Prices																
1/2#	1.79	1.51	2.83	2.17	1.17	1.75	1.73	1.81	2.13	1.59	2.43	1.95	1.15-3.60	1.81	1.80	1.81
12 oz. Plastic	2.22	2.27	2.40	2.15	1.97	2.20	2.02	2.21	2.75	2.32	2.32	2.08	0.99-4.00	2.25	2.25	2.21
1 lb. Glass	2.72	2.50	2.70	2.96	2.21	2.58	2.54	2.62	3.42	2.45	3.06	2.93	1.99-4.29	2.75	2.83	2.69
2 lb. Glass	4.65	4.37	4.55	5.61	3.95	4.68	4.56	4.61	5.17	4.26	4.60	4.43	3.25-8.49	4.70	4.81	4.43
3 lb. Glass	6.31	6.11	7.50	6.75	4.00	6.79	6.25	6.43	7.03	5.77	6.81	5.30	2.75-10.00	6.46	6.53	6.21
4 lb. Glass	7.60	7.55	8.13	8.33	8.13	6.53	7.95	8.68	7.00	8.50	8.13	8.95	5.95-10.50	7.95	7.84	8.10
5 lb. Glass	9.30	9.97	9.80	9.40	8.25	8.09	9.49	10.18	9.25	8.95	9.38	8.39	7.25-15.35	9.43	9.57	9.14
1# Cream	3.19	3.11	3.58	3.43	3.58	2.67	2.77	3.16	4.20	3.89	3.87	2.82	1.99-5.50	3.24	3.49	3.22
1# Comb	4.16	4.46	3.50	4.05	4.09	4.13	3.88	3.71	5.00	4.09	5.23	4.75	1.95-6.00	4.31	4.25	4.08
Round Plastic	3.77	3.07	3.50	3.56	4.15	4.50	3.61	3.81	5.50	4.15	4.67	4.11	2.60-6.00	3.85	3.76	3.69
Wax (Light)	2.66	3.21	2.38	1.65	1.45	3.23	1.64	2.32	2.50	1.30	2.56	2.71	1.30-7.50	2.64	2.89	2.69
Wax (Dark)	2.22	2.66	2.08	1.51	1.05	2.80	1.82	1.93	2.00	1.20	1.97	2.09	0.90-6.00	2.21	2.48	2.37
Poll. Fee/Col.	38.06	41.11	30.00	38.33	25.00	36.50	37.88	38.33	20.00	39.63	50.00	40.50	20.00-60.00	38.89	36.71	35.93

Roger Morse

Research Review

"Balling behavior – still a cloudy picture."

A group of 50 or more bees may sometimes grasp a queen's legs and wings and cluster tightly around her. This is called balling. Balled queens are usually not killed, though several people have mistakenly thought it is a queen-killing process. It has been stated that balled queens may sometimes die from a lack of air or of starvation, which are probably correct. The balling of a queen by worker bees is not well-understood.

Bees will usually form a ball of bees around a foreign queen that is introduced into their colony. This type of ball has been described by many people during the past 200 years. Robinson (1984) reported three types of behavior that might be seen by worker bees when a foreign queen is introduced into their colony. The workers may be passive, or there may be nonaggressive or aggressive balling. However, sometimes when inspecting a colony, beekeepers have noted that workers will sometimes ball their own queen.

A recent paper by Pettis et al. (1998) explores the role that queen mandibular gland pheromone plays in causing balling. This was done by adding "a synthetic blend of queen mandibular gland pheromone" to the abdomen of a worker bee and reintroducing her into her own colony. What was found is that a larger dose of synthetic pheromone causes balling to occur more rapidly and that the ball is larger. This is good information, and helpful in understanding the process. However, it still does not explain why bees ball queens.

Huber's explanation

Nearly 200 years ago, Francis Huber (Huber, 1814) studied the inner workings of honey bee colonies. He wrote, "I have never seen any combat between the queens and the workers, but often between the queens themselves." Combat between queens and workers "could not be permitted to the workers because, in a republic composed of so many individuals, a simultaneous consent cannot be supposed to exist, it would frequently happen that a group of bees would pounce upon one of the females, while a second group would massacre the other, and the hive would be deprived of a queen. Therefore it is necessary that the queens themselves be entrusted with the destruction of their rivals."

Huber continues by saying, "The workers will at no time attempt to use their sting against the foreign queen." When a stranger queen appears at a colony entrance, "the guards seize her " and hold her by biting and clamping on her. He says further that if the bees hold a queen too long she may die because of a lack of food or air. However, "we have seen queens escape in good health from an imprisonment of 17 hours and end with reigning in the hives where they had been so ill-received at first."

Huber concludes that balling is a protecting and holding process but that the bees encourage combat between queens in a hive when more than one is present.

Miller and what to do

When I am stuck and cannot explain a situation to myself to my own satisfaction, I often turn to one of the great observers of bee behavior, in this case Dr. C. C. Miller, the famous comb honey producer and author, who wrote as follows in 1903: "When a colony is being overhauled, it sometimes happens that the queen is found balled. This balling is likely more because the colony, being frightened, is seeking to protect the queen than because of any hostility to her." The size of the ball may be small, but "a ball of bees bent on the destruction of a strange queen is likely to be as large as a hickory nut, or larger. Whether the object of the bees be to protect the queen or not, anything that tends to excite them sufficiently may lead them to do violence to the queen. So, when I find the queen thus balled, I always close the hive immediately, not generally touching it again till the next day, when everything will be found all right." Miller suggests there are two reasons bees form a ball around a queen: One is to protect her, and the other may be to kill her. More important than anything else, he tells us what to do when we find a balled queen while inspecting a colony – you close the hive immediately.

Conclusion

So, is it possible that there are two types of balling? One caused when a colony's own queen becomes excited and accidentally releases mandibular gland substances, which is what the Pettis et al. paper suggests to me. Maybe, however, the action is not accidental, and such a queen is asking for help and protection. The second type of ball might be formed when bees detect a foreign queen. Is it queen pheromones that cause this type of balling, too? The picture is cloudy. BC

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Pettis, J. S., L. C. Wescott and M. L. Winston. *Balling behavior in the honey bee in response to exogenous queen mandibular gland pheromone.* Journal of Apicultural Research 37: 125-131.

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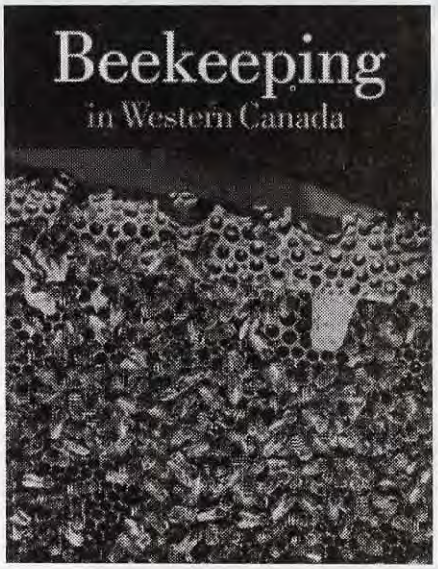
NEW FOR YOU

Beekeeping In Western Canada. Published by Alberta Agriculture, Food and Rural Development Publishing Branch, 7000 113 St., Edmonton, Alberta T6H 5T6. $30(Canadian) includes postage. ISBN 0773261397. 1998. Soft Cover, 8½ x 11. 172 pages. Edited by John Gruszka, with contributions by Rob Currie, Don Dixon, Kenn Tuckey, and Paul van Westendorp.

Regional beekeeping books are rare, especially in North America, primarily because specifics invite exclusion, and most authors and all book sellers tend to want large audiences. Which is why this book is so refreshing. The fact that it has a wealth of contributors and the financial backing of a provincial publishing agency only fine tunes the quality.

Keeping bees in the Prairie Provinces, and the adjoining states in the U.S. is at once rewarding and challenging. Intense honey crops and extreme Winters test the mettle of the best beekeepers and the toughest bees, and this book respects both of them.

Introductory chapters cover basic biology, getting started, nectar plants and supplementary feeding. More depth is allotted to Spring management, removing and extracting honey and wax. Marketing is covered, but the strength of this book is definitely the Fall and Winter management chapter. Especially noticeable is the information, diagrams, and charts on indoor wintering – the best I've seen all in one place.



Diseases, pests and predators are covered well, but, perhaps intelligently, recommendations for treatments are vague and readers are steered in the direction of Provincial Apiarists (equivalent to State Inspectors) for advice. This puts the responsibility in the hands of the beekeeper with little choice but to go to the authorities.

Excellent photos, diagrams, charts and sidebars make this a valuable addition to any beekeepers library. But certainly if you live where Winters are long and both you and your bees enjoy the severe yet generous climate.

Kim Flottum

Common sense, it seems, is not as common as we'd like to believe. Keith Newton, who runs about 2,000 colonies in Fresno, CA for pollination and honey production, had trouble feeding his bees the protein supplement needed to boost colonies for Spring pollination. Regular patties were too big, dried out, too small . . . So, to feed his mix of soy flour, yeast, whey, 55HFCS and Canola (or cotton) oil, he devised a machine that would fill large caulking tubes with his mix, to be applied with, yes, a caulking gun.

Now, each colony gets the right amount, in the right place with no laborious mixing, cutting, squishing and lifting.

Tubes are for sale with his mix, or your recipe, for $5.00 each, at 2-1/2 lbs/tube. The tube measures 12-1/2 x 2-1/2 inches. They come 20/case. Orders of 1,000 lbs. or more are discounted. Common sense.

Contact Newton Apiaries at 6539 W. Olive St., Fresno, CA 93722, 559.277.8456.

Mark Winston

Honey Analogs

"Analogy: Similarity in some respects between things that are otherwise dissimilar."

Selling one product while claiming it's another is a very old deception, and has undoubtedly been with us since the first stirrings of human commerce. I'm sure that the earliest human traders substituted cheap grades of mastodon meat for the finer cuts, or watered down the first human-brewed beers with some spring water. A good trick if you can get away with it, but our more deceptive ancestors must have learned to expect the caveman's club to come down on their heads if they got caught.

There are still traders who attempt to pass off a product composed of cheap ingredients as the more expensive real thing. In beekeeping, we certainly hear rumors about honey that has been adulterated with sugar but sold as pure honey, and occasionally there's even a court case about it, and even more occasionally a conviction. But, there's a way around putting yourself in legal jeopardy by selling a misrepresented product: come right out and brazenly admit what's in your product, and use clever advertising to convince the consumer that the substitute is as good or better than the original.

I thought we had seen the outer limit of this marketing ploy with "honey-flavored" cereals and other products. You know this one: A cereal box is plastered with drawings of friendly looking bees and glowing streams of honey flowing down from an attractive dispenser. The box art drips of well-being; **this** cereal doesn't contain those evil sugars that make your kids wired and ruin their teeth, but rather health-giving honey that will turn those little sugar-loving brats into glowing, organic, shining, healthy paragons of perfection. The public loves it, beekeepers scream about the minuscule amount of real honey in the product, and it's all legal.

But no, this isn't as far as it can go. Now there's a new product being marketed aggressively to honey packers and the food industry, honey **analogs**. Think about this one for a minute. Here's a product that in many ways is similar to honey but can be produced by transforming a large vat of cheap sugar into something that looks and tastes like honey, and is difficult to differentiate from honey even using sophisticated chemical analyses. Further, at least one company selling this product is not hiding; they're coming out aggressively with marketing ploys claiming that honey analogs actually are better than the real thing, and they're certainly cheaper.

Those of you with a computer and access to the World Wide Web might want to check out the Web site for Dhampur Invertos Ltd. (http://www.sugarindia.com) and look up honey analogs on their site. They have taken the concept of "analogy" to new heights by not only asserting that their product is similar to honey, but brazenly claiming that in many ways it's better than honey. Take a look at some of the inventive ways they make the product attractive for buyers:

"Honey analog is *enzymatically processed in an automatic plant the same way as honey bees process it naturally.*" Honey bees do enzymatically process nectar into honey. These enzymes are secreted by foragers and food-processing bees to invert the sugars from one form into another. Apparently, honey bees no longer are needed for this step, since synthetic enzymes can be produced and dumped into sugars to invert them.

"Our honey analog passes all chemical tests for natural honey, and generally processors blend it with natural honey in the ratio of 1:1." This is a good one, also. By blending chemically inverted sugars with honey, it becomes harder to detect the honey analog, since some of the things that make honey distinct will still be in the product, but only half of it needs to be real, expensive honey. The company never comes right out and recommends that the product be sold as honey, but they do provide a recipe for blending that makes it less likely to be detected as a blended product.

"DIL honey analog combines all the positive features of natural honey while eliminating the negative aspects." This was a new one for me, as I hadn't been aware that honey had very many negative aspects. But read on . . .

"The honey analog is chemical-free . . ." Well, the last time I checked, enzymes and sugars were chemicals, but I don't think that's what they mean here. Perhaps this is directed at miticide and antibiotic residues that are an increasing problem for world honey trade. They've got us there; you won't find fluvalinate,

Continued on Next Page

"They have taken the concept of "analogy" to new heights by not only asserting that their product is similar to honey, but brazenly claiming that in many ways it's better than honey."

Terramycin, sulfa, coumaphos, or any other legal or illegal beekeeping chemical in honey-analogs. I give the advertising director for Dhampur Invertos full marks for cleverly and subtly pointing this out. They obviously know their market.

"Natural honey has a wax content which has a harmful effect in large quantities on the human body." I assume they're referring to beeswax here. There probably are slight amounts of beeswax in honey, and yes, if you ate an entire hive's worth of comb, it might indeed have a harmful effect.

"Absence of impurities in the form of pollen makes the honey analog a healthier, clearer replacement of natural honey." Well, some people do react poorly to pollen, I guess . . .

I think you get the point. Industrial technology and advertising have moved beyond the earlier forms of honey adulteration where corn sugar would be blended with honey and the adulterer would hope his misdeeds wouldn't be discovered. Now, analogs of honey are being produced and marketed not only for what they are, but also as better than the real thing. It won't be long before your local supermarket is selling honey-nut cereal, with the fine print indicating that it contains honey analogs, sugar, and even honey, of course, with only enough honey to meet legal requirements for a honey-bearing product. Even worse, a new bottle is soon to appear on our shelves, filled with honey analog, and sold as a honey substitute for half the price of real honey. In a world where real things are increasingly being replaced with the ersatz, it is not surprising that honey as a product is about to go down the same drain. Will it taste as good and have as much character as real honey? No. Will rushed and hurried consumers buy it instead of honey because it's cheaper and almost the same? Yes.

We're looking at honey becoming even more of a specialty product than it is already, pushed into niches like farm markets, high-end yuppie stores and health food outlets rather than occupying center stage in the mainstream grocery and cereal markets. And, the current initiatives to develop tests and facilities for adulterated honeys may be irrelevant, because honey analog products would not be considered illegal or adulterated, so long as they are advertised as being analogs. Will consumers really care whether their cereal or sweetener contains 100 percent honey or is a mix of honey and honey analogs?

Beekeepers, of course, are beginning to react to these analog products, and the national associations of both Canada and the United States are developing action plans to respond to the obvious concerns honey analogs raise for honey sales. Individual beekeepers also are enacting grass-roots movements to take some "action." For example, take a look at another Web site (http://www.internode.net/HoneyBee/Analog/) for some ideas about how these concerns can be expressed.

I remain worried, however, because unlike adulterated honey, analogs appear legal, and as long as they are marketed for what they are, there may not be much we can do about it. The obvious response is to increase advertising that stresses the quality and purity of honey, but will that satisfy a consumer who finds the lower price of substitute products to be highly attractive? The other obvious response, to lower the price of honey, would put most beekeepers out of business. A third response, promoted by the Web site above, is for beekeepers to boycott any packers who blend honey analogs with real honey, but I doubt our industry is cohesive enough for such a boycott to succeed.

The only path I see is legislative, and do we have enough clout with our U.S. and Canadian governments to push through new legislation if we're not able to compete commercially? The need for a cohesive lobbying program with our U.S. and Canadian legislatures has never been greater, but to date the beekeeping industries in both our countries have had difficulty uniting and mounting focused lobbying campaigns in the U.S. Congress and the Canadian Parliament. Perhaps this issue will be important enough to establish a permanent office and lobbying presence in Washington and Ottawa for our respective beekeeping industries. If so, then honey analogs will have served a useful purpose, but to date the analogy between honey and analogs is not one that bodes well for beekeeping. BC

Mark Winston is a professor and researcher at Simon Fraser University, Burnaby, B.C. Canada. He is program director for Apimondia 1999.

?DO YOU KNOW?

Beginner's Questions

Clarence Collison
Mississippi State University

Preparations for the upcoming year is the primary objective of experienced beekeepers at this time. Some of the tasks include ordering packages, and queens as well as assembling new equipment that needs to be replaced because it is worn out or broken. As spring approaches, many new individuals will become beekeepers for the first time in their lives. Some of these individuals have contemplated getting bees for several years while others will begin without giving it much advanced thought. Regardless of how the decision was made and how much reading and preparation the individual has done in getting ready, the new beekeeper will have to make many decisions in regards to equipment, sources of bees and equipment, and type of bees to get. For the experienced beekeeper, these same questions seem elementary and are given little thought until they have an opportunity to help a new beekeeper or asked to participate in a beginners' bee school.

Please take a few minutes and answer the following questions on the topic of "Getting Started In Beekeeping" as a means of preparing for a new beekeeping season. The first nine questions are true and false.

Place a T in front of the statement if entirely true and a F if any part of the statement in incorrect. (Each question is worth 1 point).

1. ___ The various races of the European or western honey bee, Apis mellifera can interbreed.
2. ___ The eastern honey bee, *Apis cerana* and western honey bee, *Apis mellifera* are commonly managed by beekeepers in North America.
3. ___ When an individual purchases a 3 lb. package of bees with queen, the package is made up with a mated queen and her offspring.
4. ___ An individual needs to decide on the type of honey they are going to produce prior to purchasing frames and foundation.
5. ___ The 10-frame Langstroth hive is currently the "standard" hive used in North American beekeeping.
6. ___ The full-depth hive body is 6 5/8 inches high and is often used for the rearing of brood.
7. ___ The quickest and most efficient way to feed a colony early in the spring is to sprinkle dry sugar on the inner cover.
8. ___ Hive top feeders are used in the spring for the purpose of feeding a pollen substitute.
9. ___ The inner cover on a beehive assists the bees in maintaining a suitable hive temperature.
10. Name the three parts making up the beekeeping frame. (3 points)
11. What are two conditions that should be considered in determining the number of colonies that an apiary site can support? (2 points)
12. Smoke is commonly used by beekeepers as they examine and manipulate colonies of honey bees, since it makes them less aggressive. Describe two colony reactions to smoke. (2 points)

Please explain why the following practices are recommended in the installation of packages. (1 point each).

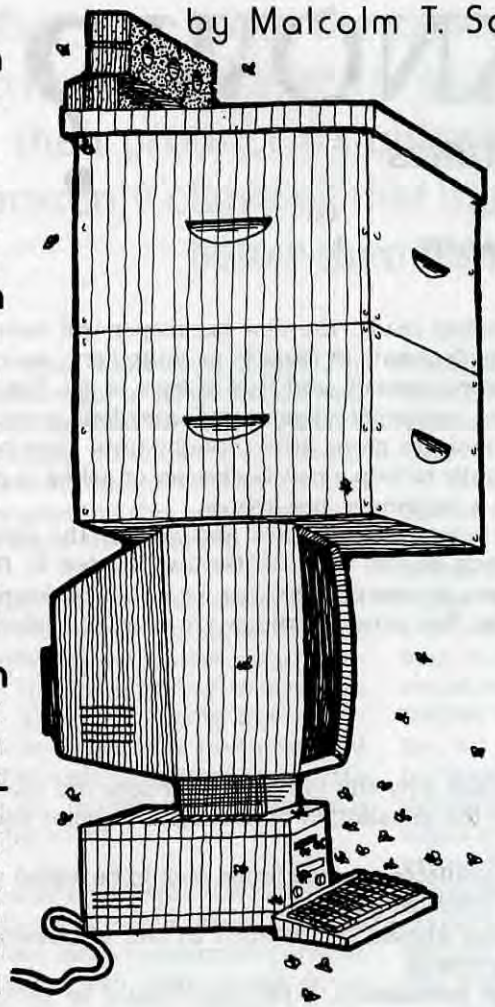
13. When available, capped brood should be added to a newly installed package.
14. Packages should be installed in late afternoon or early evening.
15. Prior to installation, a package should be sprayed with water or sugar syrup.
16. After a package is installed, the colony should not be disturbed except to see that the queen has been released and to feed it for 7-10 days.
17. Why is it recommended that a beginner start with more than 1 colony? (1 point)
18. What are two uses for nucleus colonies other than starting new colonies? (2 points)
19. What are two advantages of purchasing nucleus colonies rather than packages? (2 points)

ANSWERS ON PAGE 44

Beekeeping In The Digital Age

by Malcolm T. Sanford

You Have Mail!



As I have discussed in **past issues** of this column, much is available on the World Wide Web to the passive information consumer. For many, however, perhaps of greater appeal is the ability to interact or participate in the flow of communication. This is possible using what many have called the "killer application" on the Internet, electronic mail. Communication using this medium is easy and almost instantaneous. Once one becomes familiar with the power of electronic mail, many new opportunities present themselves to improve communication, often in unforeseen ways. In my professional and personal life, this has become more and more apparent as I am in daily contact with colleagues from Italy to Brazil to Mexico. In the past, most of these folks were practically unreachable either by regular mail (too slow) or telephone (too expensive).

Although electronic mail is possible one on one, it also can be used to simultaneously communicate with many persons at once. Before the advent of the Internet, this was made possible by calling up a computer that could also be accessed by others. One could then leave a message on that computer for subsequent users to read. A sequence of messages with the same theme over time is the genesis of the term "thread." A queen rearing thread, for example, would be a string of messages and replies about that topic. Many of these remote bulletin board systems (**RBBS**), sometimes simply BBS, still exist. The only specific North American beekeeping BBS to my knowledge was hosted by Mr. Andy Nachbaur, but he has given it up in favor of **his site** on the World Wide Web. A **European beekeeping BBS** still exists. It is hosted by **Steven Turner**. It also takes advantage of Internet browser technology.

Although many BBS continue to operate, Internet technology has produced alternatives. One is **USENET**. This is an umbrella term for a huge number of groups (over 30,000 at last count!), each dedicated to a specific subject. The one for beekeeping is called **sci.agriculture.beekeeping**. The names are arranged heirarchically. Apiculture or beekeeping is considered to be part of both the scientific and agricultural realms. Recent messages posted to this group include threads about using different types of beekeeping equipment and the history of the relationship between honey bees and *Varroa* mites. With the rise of other Internet discussion groups using electronic mail, the **future of USENET** is uncertain, but it continues to be a huge force in electronic communications.

Besides posting messages to a central site (USENET) or bulletin board (RBBS), another way to communicate to many persons at once is through an **electronic mailing list**. Messages can be routed automatically to a number of subscribers who do not have to access another site. For example, I have a list of students in my beekeeping class. When I want to say something to the whole group, I send it out to all those currently on the distribution list. For small numbers of addresses, this is manageable, but gets more difficult for larger groups. One problem is that everyone sending a message must also have the full distribution list, if they wish to reply to all concerned. Challenges in this system include keeping up with rapidly changing addresses and monitoring the list so that there is some oversight over the information released. Ideally, control is minimized in the free-wheeling environment of the Internet. However, there are times when things can get out of hand.

Managing a mailing list is made less arduous through the use of specialized software. The majority of lists I have experience with use a product called **Listserv®**. This a registered trademark of **L-Soft International**, and often that name is reflected in that of a list. For example, the one I use to mail out the **Apis newsletter** is **Apis-L**, available from **listserv@lists.ufl.edu**. There are currently well over a thousand subscribers to this list, impossible for any single person to manage. Fortunately, most of the routine tasks are automatic, and users themselves can do them. They have the option, for example, to place themselves on the list (subscribe) or leave it (unsubscribe) as they see fit. They can also send messages to the full list, look at the addresses of who is currently subscribed, and set various options to manage their mail traffic. Finally, some lists have extensive archives of information that can be searched using key words. Apis-L is not a full-blown discussion list. I use it to distribute my newsletter and solicit comments prior to printing. My list is monitored; I only accept discussion about topics in the current issue. This means, however, that the readership has input into the final draft, making it the first interactive

document dedicated to beekeeping on the Internet.

A more free-wheeling list for beekeeping is Bee-L. This is also one of the oldest lists going, available through **listserv@cnsibm.albany.edu**. Here, discussion is for the most part unregulated in the finest tradition of what many call the "anarchy of the Internet." This can and does lead to problems, as over time a certain "**netiquette**" is developed by regular users. These informal rules are often ignored, however, either because subscribers are new to the technology, or simply will not adhere to any unstated and often unenforceable regulations. This leads to a major complaint about discussion lists. Too much information is distributed by subscribers, resulting in numerous, large messages of relatively little value. Other problems include subscribers who dominate the lists with their strong opinons and/or debates where disagreement results in downright rude messages called "**flames**." Another drawback to these lists is that they can become the targets of unsolicited commercial messages as "**spams**."

Message traffic on Bee-L is so voluminous that another list has been developed called BestOfBee at **HoneyBee@systronix.net**. Subscribing to BestOfBee means that you will receive only certain information posted on Bee-L. One must realize that a human filter is involved, however, and selection of forwarded material is sure to be biased in one way or another. I use this service, however, and it does cut down message traffic considerably. Other lists available are those about apitherapy (Apither at **listserv@beenet.pp.se**), social insects (Socinsct at **listserv@uacsc2.albany.edu**), bee breeding (Beebreed at **listerv@listserv.uoguelph.ca**), and beekeeping extension (Apinet-L at **listserv@amigabee.org.uk**). The listservs all work the same way, and instructions on subscribing and setting other options are available by sending the message INFO REFCARD to **listserv@listserv.net**. My favorite option is called "digest." This gathers all posts received each day into a single megamessage, complete with subject lines.

Beyond the Listerv® program, there are other electronic mailers. For example, the French list abeilles is found at **MAJORDOMO@fundp.ac.be,** and the Spanish list can be requested through **malka@webnet.com.ar**. Another service is provided by "**autoresponders**." These programs will automatically send requested information by electronic mail. The New Zealand site at **http://www.beekeeping.co.nz/email.htm** links to autoresponders and will also take new users step by step through the process of subscribing to the discussion lists mentioned above. Warning! They can become habit forming! BC

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

THE LATEST NEWS FROM THE NATIONAL MEETINGS

Kim Flottum

The best way to get immediate information in this industry is to attend a national beekeeping association meeting. This is where researchers, beekeepers, politicians, packers and bureaucrats disseminate up-to-the-minute information from their respective fields of knowledge or influence.

The second best method is to do what you are doing right now – read the reports of those who attended. This may be even better because reports tend to distill the information to its essence – the who, what, where, why, when and how. It is also far less expensive than travel, time off work and hotel bills. Conversely, shortened reports by necessity leave something out. Reducing a 30 minute talk to two or three sentences, even a few paragraphs leaves much unreported. Visuals too, are not present so you don't see the graphs and charts and up-close photos of the topic, nor do you have access to the handouts, catalogs, new product sheets, extension brochures and the speakers before or after their talk.

Nevertheless, huge amounts of information were covered at the most recent national meetings and we have squeezed as much as we could onto these three pages, plus the up date article in the back. Enjoy, learn and, perhaps if we have whetted your curiosity enough, you may plan on a personal tour next year.

A year ago at the Federation (ABF) meeting in Colorado Springs a host of problems were aired concerning the health and productivity of queens available in the U.S. Since then research funded by several groups – some U.S. queen breeders, The Ontario Beekeepers Association, the Multi-state Program out of Penn State and the USDA has shed light on these questions posed only a year ago.

USDA researchers have found that queen producers using liquid fluvalinate (a misuse of the label by the way) in mating nucs were finding both queen and drone sterility problems increasing. Fluvalinate was interfering with queen development, and the liquid carrier, xylene, (a highly toxic substance) was inhibiting sperm viability in drones. No wonder we are having problems!

Tracheal mites in queens were found by Canadian researchers to be moving into air sacs in the queen's head and feeding there instead of the usual tracheal trunks. This damage reduces hormone development responsible for reproductive maturation. At the same time, a survey of U.S. queens found 20% had tracheal mites. Moreover, 7% had nosema, which causes low weight, fewer eggs laid and supercedure within a month or so. Further, queen spermatheca examinations showed many with low sperm count, and only a few with high counts. Most were in the normal range.

Shipping conditions were monitored with temperature data loggers by the Penn State people too. Temperature extremes ranged from -20° to 109°, but most were in the 55° to 85° range. However, one broken cage, and several broken data loggers were received, and seven queens arrived dead.

Queen and package producers had a chance to quiz postal reps at the ABF meeting. Changes are in the works, especially for package shippers. Now, most packages are shipped fourth class special handling. In 1998 the Post Office threatened a 220% increase in Special Handling charges. Only a last minute push by package producers stopped that, but some producers saw the handwriting on the wall and looked for alternatives. Packages now are sent by some as Priority Mail, but problems still exist. One problem is that the P.O. contracts with independent carriers with little or no supervision over ventilation, sitting on tarmacs, freezing plane rides and the like. Insurance is the only recourse for those receiving packages of dead bees. The Post Office, it seems, doesn't want the responsibility, and doesn't care.

Some producers are looking elsewhere for service and UPS is interested. Overnight delivery has been tried, and it works. Costs are higher, but losses are fewer and beekeepers get front door delivery, eliminating Post Office nightmares, Post Masters who don't know, or don't care about the regulations and loss of control while in the hands of independent handlers. The next year or so should see some major changes, but driving south or west yourself to pick up your packages is still a good idea, that saves bees and money.

New pests and the chemicals to treat them are at or near the top of the list for many beekeepers. The small hive beetle has caused a huge commotion, and rightly so. Already discovered in four states – Florida, Georgia, South Carolina and North Carolina – the major migratory move this Spring will probably share the wealth. Originally not considered a serious problem, six months' experience has proved otherwise.

That short period has revealed much about the biology of this imported creature. Adult beetles favor invading disturbed, weak, and small colonies – those with supers just added or removed, that have just swarmed, or small nucs – and immediately attack eggs and brood for protein. This enables them to mate and produce eggs and from there it's all down hill. Larvae tunnel into brood, pollen and honey, eating, defecating and causing general destruction and soon the colony absconds.

As reported here over the last few months USDA and Florida researchers have been searching for a control and one seems to be at

NEWS ... Cont. From Pg. 23

hand. The new Bayer Bee Strip, when placed under a small piece of corrugated cardboard has offered good control when placed on top bars at the front and back of a super. Adults seek protection under the cardboard and contact the strips – dead beetles. A commonly used fire ant soil treatment placed around colonies seems to kill larvae when they leave the colony to burrow into the soil nearby to pupate. Reportedly it will be registered soon in affected states for their use. Researchers are still looking for answers to cold hardiness, soil type preferences and colony attractiveness questions, but the panic of not knowing anything seems to have abated. For more information on this pest see Tom Sanford's article in the back of this issue.

The Bayer Bee Strip has received a Section 18 use permit in Florida and Georgia for both *Varroa* and the small hive beetle, and in Minnesota and Wisconsin for *Varroa* only. Since *Varroa* resistant to fluvalinate have been discovered in over a dozen states (along the major migratory routes) more states are likely to file soon.

This Coumaphos strip is somewhat different than the Apistan strip used the last 10 years. They are individually made, not in long strips, they are white and less rigid than Apistan, have a built in hang tab and are about twice as thick.

Tests have shown them to be very effective against both *Varroa* and the beetle, but again, they are only available in a few states now. If your state has had outbreaks of *Varroa* resistant to Apistan your Department of Ag, Extension Specialist or *some* regulatory agency in your state should be filling out papers today. However, if Apistan is controlling your mites (see January Inner Cover for test) continue to use it. It will take some time before this new strip is in general use and you cannot buy it unless you live in a permitted state. For those who do it is currently available from Mann Lake Supply. A catch: Each state has a set number of strips per year that can be sold to beekeepers in that state. Once that number is reached no more will be available. Therefore, if beekeepers buy strips to give or sell to others in different states they will be shooting themselves in the foot so to speak, and may not be able to get them later in the year.

Two other compounds are also near registration. Formic acid gel, from Betterbee in New York is finishing the packaging and label requirements now and will have it for sale as soon as possible. Efficacy tests show that it works in cooler temperatures better than Menthol, but too-warm conditions cause it to go too fast. Two applications, about two weeks apart control 100% of tracheal mites and 90% or better for *Varroa*. The cost will be about the same as Apistan or Bayer's Bee Strip.

The Wellmark people are testing a compound named Apitol for controlling Varroa. Already in use in several countries it is applied in syrup. Efficacy is not as high as Apistan or the others, but when added to a *Varroa* management program offers beekeepers yet another choice.

Still another technique is using bee stock resistant to or tolerant of *Varroa* or tracheal mites. Hygenic bees, discussed here a while ago, and available from several producers are one way to go, but the USDA's bee brought over from Russia also shows some real promise. After preliminary examination in Russia and a year's quarantine here, studies show these bees have fewer *Varroa* on the worker larvae (30% U.S. vs. 7% Russia), and drone larvae (80% U.S. vs. 40% Russia). Moreover, when tests were run by introducing mites into clean colonies, nearly three times as many mites were found on non-resistant bees as the Russian bees after an appropriate observation period.

The Russian bees had honey production equal to or even greater than the control bees, had fewer tracheal mites, produced less propolis and had a lower incidence of chalkbrood. All of these traits, when combined, (and if they can be reproduced) should help reduce chemical use by as much as half. A promising proposition.

Field tests this season will be held in Louisiana, Iowa and Mississippi for further tests under commercial conditions. Then, when complete the stock will be maintained at the Baton Rouge Lab and made available to commercial producers as breeding stock. This is different (and better) than past experiences when a stock was developed and released and maintenance was left in the hands of commercial producers.

Meanwhile, back in Russia a cooperative program has been set up to further explore varieties resistant to *Varroa*, or anything else that shows up.

Scientists at the Tucson Lab have been selecting for colonies with fewer mites using only natural selection. Working with a commercial beekeeper results have gone from colonies with 120 mites/100 bees to six mites/100 bees. More needs to be done, but the preliminary results are very promising. The bees are pretty much Africanized though, so exporting these to other parts of the country seems unlikely.

Essential oils by the 100s have been tested, in conjunction with scientists at Penn State and other locations and several have been found that are effective. A plastic strip impregnated with these is being developed by the Tucson people that has a slow-delivery system of 24 days. Effective chemicals lasting long enough to offer good control promise yet another tool in the arsenal beekeepers will have.

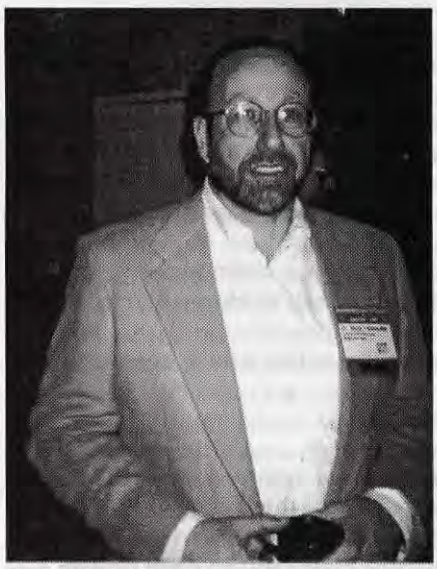
One interesting aspect that was discussed only briefly was sources, cost and purity of the essential oils on the market. There have still been no definitive studies published on the effectiveness of many of these compounds, the appropriate delivery system/mechanism, nor the residue left by the myriad schemes cooked up by many beekeepers. Although legal to use, the 'smart,' 'effective' and 'efficient' details have been at best, vague. One researcher delved into this and found a wide range available on the market relative to purity and cost. For instance, for the same amount of pure product with the same degree of purity, the price for eight ounces ranged from twelve to one hundred dollars for one of the commonly used oils. How much are you paying? Second, almost no data is available on what happens to these compounds when introduced into a colony. Are they absorbed into the wax? Do they volatilize? Do they find a new home in any honey available? Concentrated, nearly all of the popular oils are toxic. One supplier

cautions against using them without skin protection and to only take them internally under a doctor's supervision. Does that go for eating comb honey when the foundation used has these (or any of the compounds generally used in a colony) locked up inside? Tough questions. Few answers.

Finding queens in any large colony can be difficult, but in an Africanized colony – typical in Arizona and elsewhere in the southwest – it can be downright impossible. To that end a chemical technique to attract and capture a queen is being looked at, and with luck developed for common use.

Tucson is the USDA's pollination lab, and a significant and high profile problem is pollination of soybeans genetically engineered as herbicide resistant. Round Up Ready™ may be great for farmers, but where soybeans produce a substantial honey crop will there be problems? And what about cotton?

Both the Weslaco, TX and the Beltsville, MD bee labs have been on the forefront of the acute problems in the industry this past year.



Dr. Mark Feldlaufer

Dr. Mark Feldlaufer, who has taken the reins at Beltsville is an insect physiologist and certainly brings a new perspective to the position, and the industry. Projects at Beltsville include germ plasam preservation, IDing viruses, wax moth control, and, in the glamorous column, small hive beetle biology and control and studying the mites resistant to Apistan.

Jeff Pettis, one of the speakers at the queen symposium last year, has developed a field test kit to test for this resistance based on the high tech lab test developed in Italy. The screened bottom board is also being looked at there. This allows mites (and perhaps beetles?) to fall out of reach, and out of business, and has been shown to reduce *Varroa* infestation by as much as 15%. Yet another IPM tool.

"Next year get the pictures, graphs and small talk in the halls. Plan on San Diego, Fort Worth or both."

It's been the Weslaco Lab at point for the USDA on both the beetle and resistant *Varroa*. Spending time in Florida and a variety of other states they have authored much of the work on both pests. Although other projects are on line, these are the big stories from there. Oh, one more. They have documented another problem – *Varroa* resistance to Amitraz. Go figure.

Dr. Narang spoke also, outlining the goals and directions USDA ARS (he's the ARS leader) has for honey bee research. It is an impressive list, ranging from mite resistant bees to wax moth control to pollination to pesticides to the small hive beetle. Funding certainly is the biggest question, and recent lobbying by the bee industry to secure additional funds for Weslaco has not gone unnoticed. This cooperative relationship needs to be fostered as a two-way street according to ARS. Money *from* bee industry lobbying and other sources goes a long way in deciding how it will be spent.

A panel of big time honey dealers shed a great deal of light on why honey prices are the way they are. Reduced crops and the quotas on China in '95 forced buyers to look elsewhere – Argentina was a natural bet. Sellers there sell honey futures and a short crop, coupled with early selling there caused a shortage and the price to go up more. In '96 the Argentine crop was delayed a few weeks and again to cover commitments prices went up more. Then, at the peak, other world producers joined in, a good U.S. crop helped (or hurt?) and prices began to fall.

During this rise-in-price time, buyers kept large inventories to hedge against even higher prices. When world conditions changed and prices dropped buyers stopped buying to reduce inventories, and as prices dropped lower buyers delayed purchases as long as possible to take advantage of the lowest price possible.

Because honey comes to market at different times of the year from the major producers, it tends *not* to be considered a commodity – different quality, flavors, colors and harvest dates make each crop unique. Well, maybe.

Nevertheless, Argentina and Canada will continue exporting honey to the U.S. and some packers and handlers suggest that U.S. producers should not delay sales anticipating stronger markets later. Time will tell, the loan program is still a mystery and even so, import sales decreased 10% last year.

Other news from the big guys indicated that sales were up for retail and bulk honey, but food service sales were down. Dollar amounts sold were up 10% and unit sales were up 20%. These figures are compared to sales figures for the same period a year ago – but that was when the price was sky high. Are bulk prices up in your neighborhood? And who's making the greatest profit when retail sales increase? Food for thought.

A final comment made by a large packer, as a result of surveys his company has taken is that *over 80%* of his customers prefer plastic containers for retail sales. Bears, bottles, tubes . . . All preferred over glass. I don't think it takes a rocket scientist to figure out that ease of use is at the top of your customer's wish list. A very valuable lesson here.

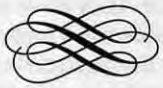
Like I said at the beginning – being there is best, but a report from somebody who was, and took notes, is almost as good. Maybe a trip to Fort Worth or San Diego next year will be worth the expense. Plan now for a trip next Winter! BC

CLUB CORNER

by George Muhlebach

Mission Statements & Bylaws

A series of articles designed to provide ideas, guidance and a road map for regional beekeeping clubs. Prepared by members of The Back Yard Beekeepers Association (BYBA). Founded in 1993, the BYBA's membership consists of 150 hobbyist beekeepers from Fairfield and Litchfield Counties (Connecticut) and Westchester County (New York). www.fairfieldweb.com/byba



Why do we need a mission statement and bylaws anyway? After all, when some people with a common interest get together to form a club or an association (I will use these terms interchangeably in this article), they know why they get together, right? Wrong! When asked, there are probably as many ideas and expectations about the club's purpose as there are people. If that situation is not clarified early on, there will be statements like: "But I thought we were going to do ... and not ..." (you fill in the blanks). Before long there will be confusion that will lead at best to disinterest, at worst to disarray, discontent or even fighting.

The mission statement spells out the main purpose of the club, and the bylaws tell by which internal rules this purpose is achieved.

How do we go about writing a mission statement? There are obviously many different ways that are right, depending on the internal group dynamics and the size of the group. Generally though, the more people participating and having input in the creation of the mission statement, the better it will reflect a consensus, and the better it will be accepted.

If the group is small enough, the writing probably can be done in one meeting, and it can be finalized in a second meeting after everyone has had a chance to think about it. For a larger group, it is often easier to have a first discussion during which many possible goals and expectations are listed and then prioritized. An individual or a small group is then responsible to write a draft version which needs to be discussed, critiqued, and modified until it is acceptable to all participants.

Possible components to be included in a mission statement are:

* Exchange of experience among the club members
* Education/training of the members
* Providing sources for beekeeping materials (maybe do-it-yourself workshops)
* Education of the local public
* Fighting local beekeeping restrictions
* Recruiting/training of new beekeepers/club members
* Providing a forum for camaraderie or social functions
* and many more.

Creating the bylaws. As mentioned above, the bylaws are the internal rules by which the club intends to achieve its purpose. It is my understanding that there are no legal requirements for a club to have bylaws and thus there is no legal requirement for their content. (A lawyer friend suggested that bylaws may include any kind of rules, including the requirement for the board members to stand on their heads while speaking. While the suggestion was made in jest, it sure would speed up the meetings!) Since there is no legal requirement to have bylaws, they can (and I think they should) be written in plain, simple English, not in legalese.

Bylaws may, however, be required to get tax-exempt status on the federal and/or state level. This is probably welcomed by most bee associations. A tax-exempt status may also minimize the personal liability of the club officers should the club ever become involved in a

civil matter. These legal matters change with time and are different from state to state. It is important to get the input and advice from an experienced local tax lawyer (hopefully *pro bono* or in exchange for a jar or two (or even 10) of honey).

As an example, in our club (The Back Yard Beekeepers Association), we decided to include the following topics (articles) in our bylaws:

Article I: Name. This article describes the name and mentions that we are a non-profit organization under state and federal law.

Article II: Mission. We deliberately wanted the mission statement to be broad, and it reads: "The mission of this association is to provide its membership with a forum for sharing knowledge and mutual interests in beekeeping, and to educate and promote its benefits to the public".

Article III: Membership. We decided to have four different memberships: regular, contributing, student and honorary, all of which have the same voting rights. This article also gives the qualifications of the four groups, e.g., the contributing member is a regular member who voluntarily contributes more than the established membership fee (only he and the treasurer know that he is a contributing member). Membership in our club is open to everybody.

Article IV: Meetings. This article defines the fiscal year (in our case the calendar year) and the schedule for the Annual Meeting and the regular meetings (e.g., monthly). It gives the conditions under which members can call a special meeting if they deem this to be appropriate and it sets the necessary quorum for the membership to make decisions.

Article V: Officers. BYBA has five officers: a president, two vice-presidents, a secretary and a treasurer. These officers are elected (or re-elected) at the Annual Meeting.

Article VI: Board of Directors. The number of board members should depend on the number of club members. They, together with the officers, are responsible for the management of the club. An appointed nominating committee recommends them to the Annual Meeting, where they are elected. The board members and the officers are serving voluntarily, and are not compensated. The president calls the board meetings. The most important business of the board is the planning of the regular meetings of the club. In addition, each year, the board has to prepare a balanced budget to be approved at the Annual Meeting.

Article VII: Committees. The president, with the consent of the board, may appoint committees. These committees draw on the special background and expertise of regular and board members. They are charged to do the necessary detail work required to run the club. Each committee has a specific assigned task and thus its life span is normally limited.

Examples of our club's committees are: Adopt a Nature Center • Farmer's Market • Finance • Hospitality • Lending Library • Membership • Newsletter • Nominating • Outreach Program • Programming • Public Relations • Research • Web Site.

Article VIII: Dues. The board sets the annual dues. They have to be set high enough to allow for at least a balanced budget. Please note: Contrary to the practice in the federal government, a club will get into trouble fast if it engages in deficit spending. (For more details on developing a club's board of directors, see "Club Corner" in the September 1998 issue of *Bee Culture* for an article on the topic of board of directors.) Payment of the dues is a requirement for membership. Our dues structure is as follows: Regular Member: $25/year. Student Member: $15/year. Contributing Member: $25+/year. Honorary Member: $0/year.

Article IX: Amendments. This article spells out how the bylaws can be amended or changed. This is a very important part of the bylaws since it should be a living, up-to-date document. The bylaws should be reviewed periodically, and if necessary, changed. We have made changes to our bylaws three times in the past four years: to increase the number on our board; to note our official charitable status as recognized by the IRS; and to add a second vice-president and increase the number of members that constitutes a quorum.

Article X: Dissolution. Even the best of clubs may not last forever. We decided that in the case of dissolution, our club's assets should go to a unit of government, an educational institution or an organization to further the interests of beekeeping.

As you can see from the above, there is nothing magical in bylaws. It is all rather straightforward, but a set of bylaws which is tailor-made for a given association and accepted up front saves a lot of discussions later on. If you have questions, do not hesitate to contact us. If you'd like, we would be happy to send or e-mail you a copy of The Back Yard Beekeepers' bylaws. You are encouraged to borrow shamelessly from ours as you prepare your own.

George Muhlebach has kept bees for 17 years. He has been a board member of the Backyard Beekeepers Association since its inception five years ago until this Summer, when he and his wife, together with his bees moved to Cape Cod, MA. Trained as a chemist in his native Switzerland, he retired early from his job as Director of Environmental protection at a major chemical company. You are welcome to reach George by email at gmuhleback@capecod.net.

Practical Land Based Honey Production

Henry Hiemstra

Find some land, grow these plants, make honey.

The idea that a plant could be gorwn commercially for nectar only so that an acre would return as much or more than corn or soybeans has been around since the 1880s, and Frank Pellett promoted this idea from 1930 to 1960. Then there was the USDA experiment published in the *American Bee Journal*, July 1982, where they estimated a production of 2,500 to 3,125 pounds of honey per acre. Ayers and Hoopingarner at Michigan State University have also done a lot of work selecting plant species, their nectar production and blooming dates. Beekeepers throughout the years have made efforts in planting these selected plants on a large scale but with generally poor results. Problems included, but were not limited to: The seeds did not germinate, and the few that did germinate were taken over by weeds. The effort was not worth the results.

Blue Globe Flower

Procedures

In 1997, we planted one acre of Borage. This plant has a good reputation for white honey, is a good producer in western Canada, and has the ability to hold its own against the weeds. But there are also recent reports from both western Canada and England, where it is grown commercially, that it yields only sporadically. The bees worked the plants from mid-July to September with an average of five bees per square meter at all times. However, it did not seem to make a difference in the home yard of 25 hives that Summer. The Summer of 1998 we planted a half-acre of a variety of plants that through the years have picked up a reputation as being good producers and long bloomers. We used some of the technology developed in the market garden industry, and this proved very beneficial.

Instead of planting the seeds in the field, we started them early as plug plants in a greenhouse. This gave us a six-week head start. We then laid down plastic mulch, a black plastic film used to control weeds, warm the soil, and conserve moisture. The film comes in a four-foot-wide roll. Six inches is covered with soil on each side to prevent the wind from picking it up. This leaves a three-foot wide planting strip the length of a field. The plugs were planted at various spacings, depending on the species, with two rows of plants alternating down the strip. A one-foot-wide space of bare soil separated the strips of plastic mulch This allowed the rainwater to rur. off into the soil and back under the plastic to water the plants. Not all the plants responded in the same way to the plastic mulch. The plug plants were about six inches tall when transplanted. Every plant was given a half-cup of water with liquid fertilizer at planting.

The black plastic worked very well for weed control. The odd weed would come up in the same opening as the plug, but they were not hard to remove. The problem area is the one-foot spacing between the strips. This space was soon covered in a carpet of red root pigweed. We tried removing these with a corn cultivator, but this was too hard on the plastic. However, in places volunteer Borage came up from last year's crop. In those areas, weeds were no problem after the first hand pulling. The black plastic also did a very good job of conserving moisture. We had a very dry Summer, but the

Plant Details

Wood figwort (*Scrophularia nodosa* L.) Spacing 1 foot	did very well, planted the third week of May, bloomed in June, bees Started working flowers June 27 until end of August.
Anise hyssop (*Agastache foeniculum* [Pursh] Ktze.) Spacing 1 foot	did very well, started blooming third week of July until September, grew 3 feet tall. Bees worked the flower continually.
Mariland figwort (*Scrophularia marilandica* L.) Spacing 2 feet	did very well, started blooming the fourth week of July until September, grew to 6 feet tall. The bees worked the flowers all day long.
Spider plant (*Cleome spinosa* (Jacq.) Spacing 1 foot	grew very well, started blooming second week of July till October, grew 7 feet tall, but bees worked it only early morning and late evening.
Golden Honey Plant (*Actinometis alternifolia* L.) Spacing 2 feet	grew well, started blooming the third week of August to October, grew 6 feet tall.
Catnip (*Nepeta Cataria* L.) Spacing 1 foot	started very slow, started blooming in the first week in August until the first of October, did very well in late Summer. Bees worked the Flowers all day.
Chivirico (*Leonurus sibiricus* L.) Spacing 1 foot	did very well, started blooming the fourth week of June until mid-August, grew 3 feet tall. They have trouble crowding out weeds. Bees worked them all day long.
Motherwort (*Leonurus cardiaca* L.) Spacing 1 foot	did not do well, seed would not sprout, wild transplants did not do well. Soil with plastic mulch may be too warm for them.
Blue Globe Flower (*Echinops ritro* L.) Spacing 1 foot	did very well, biennial, will flower second year, meadow voles hide under plastic mulch and eat taproot.
Mountain Mint (*Pycnanthemem pilsum* Nutt.) Spacing 1 foot	did not do well, slow-growing, wind would break branches. Should be spaced closer so they can support each other. Plants send out new branches under plastic. But Mountain Mint never does well until second year.

little rain that we did have would trickle into the plug plant openings and down to the edges. The extra heat from the absorbed sunlight may have been detrimental to some species like Mountain Mint and Motherwort, but were of benefit to Anise hyssop and Figwort.

Conclusion

For fixed-land honey production to be a success, we do not need a great variety of species: About five species that would do well under cultivation. Anise hyssop would be our favorite, although it may act as an annual on clay soil and as a perennial on sandy soil. If we keep collecting seeds from the ones that do survive the Winter on clay soil, we should come up with a hardy plant. To cut down on labor costs, there are machines that can lay down the plastic mulch. There are also planters that can plant the plugs in the plastic mulch. To control the weed problem, we will plant Borage and other species that can be direct seeded in the row be-

Mountain Mint

Continued on Next Page

Anise hyssop

Cost Of Planting

	First year	Second year
Input cost for half-acre, 8,000 plants		
1. Land . . .	$75.00	$75.00
Seeds . . .	$50.00	
2. Greenhouse cost . . .	$800.00	(6.) 400.00
3. Machinery, tilling land . . .	$16.25	
Fertilizer 200 pounds 16-16-16 . . .	$150.00	$75.00
Plastic mulch . . .	$90.00	
Planting plugs, hand planting . . .	$500.00	$250.00
Weed control, hand pulling . . .	$588.00	$250.00
	$2,269.25	**$1,050.00**
Return		
4. Honey production x 150 pounds 24 colonies	$1,800.00	$1,800.00
5. Pollen, hives had pollen traps all Summer	$1,000.00	$1,000.00
	$2,800.00(7.)	**$2,800.00**

1. Based on current rent of farmland in our area; $150 acre.
2. Based on commercial box plant production; 10 cents per plant.
3. Based on cost of tilling in southern Ontario; source OMFRA.
4. The home yard produced 75 pounds more than surrounding yards.
5. Based on the fact that the more honey that is produced the more pollen will be produced.
6. Based on the possibility that half the plants will be killed in the Winter.
7. This is assuming that honey production will again double over the surrounding yards.

tween the plastic strips at the time it is laid down. This will control the weeds. Use fertilizer instead of manure to cut down on contaminating the soil with weed seed. Use white plastic instead of black, as black will absorb too much heat in the Winter, and may kill the perennial plants.

We should start out with a well-drained, well-prepared soil bed. With the use of perennial plants, this then becomes an environmental-friendly farming method, as we would only use an annual foliar fertilizer. No herbicides or pesticides, and the land would be treated as no-till. Disposal of the plastic mulch would be the only drawback; however we may get three or four years out of it. The goal is to have every square foot of land covered with as many flowers as possible, that produce as high a volume of nectar as possible, for as long a period as possible, with as little labor and energy input as possible. All this should add up to an environment-friendly practice and honey in the hive. BC

Henry Hiemstra lives in Aylmer, Ontario Canada. He raises a variety of honey plants for land based honey production and to produce seed for resale. He has a large variety of seeds, in various sized packages for sale, but is looking for a U.S. distributor. You can contact him at RR 4, Aylmer, Ontario N5H 2R3.

HOW TO GROW

Anise hyssop blue Anise hyssop white Motherwort Chivirico Catnip Mountain mint Wood figwort Mariland figwort	sow in plugs or trays March 1 cover with paper until sprouted plant out when danger of frost is over spacing 1 foot apart

Sow the following directly outdoors

Buckwheat	annual
Chapman honey plant *blooms second year*	biennial
Blue globe flower *blooms second year, self seeds*	perennial
Golden honey plant	perennial
Spider flower	annual

James E. Tew

Bee Culture's Beeyard

What equipment? Which bees?

Selecting Bees Currently, BC's yard only has a couple of hives, though plans are to get up to eight to ten hives. How to increase colony numbers is a constant source of discussion amongst beekeepers. And, for nearly as long as beekeepers have kept bees they have searched for the best strain of bees. We're still doing that today. The famous Italian honey bee (*Apis mellifera ligustica*) has become most widely accepted across the U.S., but other races are commonly available. As colonies are added to our yard, plans are for having a mix of races other than the Italian bee. I am not planning on a technical evaluation of bee breeds, but only a casual observation on different types of honey bees managed in traditional ways.

Carnolians (*Apis mellifera carnica*). Carniolans are from various provinces in Austria and the former Yugoslavia, but is even more widely spread than that. In many locations, Carniolans are as important as the Italian bee – if not more so. The Carniolan bee is grayish black and may even be a distant variety of the Italian honey bee. It is a slender, docile bee that is long-lived, hardy, winters well and is an aggressive forager. This bee is not an avid propolis user and produces snow white cappings. Carniolans' biggest problem is that is has a strong swarming characteristic.

Caucasians (*Apis mellifera caucasica*). Caucasians, frequently called Gray Caucasians, are another of the major economic races of bees kept worldwide. They originated in the high valleys of the Central Caucasus in Europe. A dark bee looking much like Carniolans, Caucasians are gentle and not inclined to swarming. However, they are prodigious propolis users; they are not known to winter well; and they tend to build lots of brace comb.

Italians (*Apis mellifera ligustica*). Worldwide, Italian bees seem to be the most popular and were first brought to the U.S. in 1859. Their color varies greatly from leather-colored to bright yellow (Golden Italians). Italians have the expected characteristics of being gentle on the comb, excellent nectar collectors, minimal propolis users, good hygienic behavior within the colony, good comb builders, and producers of snow white cappings. Alternatively, this otherwise perfect bee tends to produce too much brood at the wrong times resulting in high winter food consumption and spring dwindling. They also drift from colony to colony quite badly and are known to be robbers.

We are also going to install some locally produced queens and some queens from the west coast. When all is in place, we should have a good mix of different queens of different races from across the U.S.

Record Keeping Record keeping in the bee yard drives me crazy. I make the best plans every year and am unable to keep up the pace throughout the year. I envy others who don't have the problem. But because of this variation between beekeepers, record keeping among beekeepers varies from pebble configurations on top of the hive to a lap top computer in the field – with all kinds of variations in between. Record keeping in this project will be more of a beekeeping diary rather than a true system of columnized data. My single yard will be broadly compared both between months and between colonies. Comments can be made concerning the specific needs of individual colonies as well as comments concerning nectar flows. In true "real world" beekeeping, trips to the yard will have to be on an "as needed" or "as possible" schedule. Essentially, I will make note of what I did in the beeyard and also note what the bees did, or are doing, in the yard. I am planning to store these comments in a computer program in order to be able to search for various words or terms as needed. In this manner, I can record comments and find them later. I can do this fairly easily without having to devise a complicated data grid that requires completion each time I visit the yard.

Comments from the December Diary As I reported in the January issue, my comments for December, 1998, were sparse and direct. There are two colonies in the yard that are in decent shape, but need basic maintenance.

Continued on Next Page

BEEYARD ... Cont. From Pg. 33

Otherwise, everything else was in disarray. Hive stands, grass cutting, painting - all kinds of maintenance work needs to be done. The weather is not in my favor just now, but it will be done before spring if there is an opportunity.

Buying Packages As with queens, I plan to buy several packages from different providers – again – not as an official evaluation, but for a different flavor. As you know, ideally, packages should have been ordered during November/December but this plan was not hatched then. If something goes seriously wrong and packages are not available, I will just make more splits.

Though five and two pound packages are available, three pound packages are the most common size. I'm thinking about ordering three, maybe four, packages. When ordering packages, the actual worker bees themselves are not representative of the types of bees that will come from the queen caged within the package. They are not her offspring. Since some of the specialty queen producers don't shake packages, I had considered buying queenless packages, but I have decided against that. The presence of a queen within the traveling bees will help keep the bees calmer during shipping. I will plan on banking the extra queens after their arrival. A couple of extra queens are always useful.

Banking queens is not too difficult, but is never really successful long-term. Storing the caged queens without attendant bees is the best technique. Individually caged queens are then placed above an excluder. Young workers on emerging brood are also placed above the excluder along with the rack used to hold the caged queens. It would help if thin sugar syrup was fed to the colony housing the extra queens. Queens held in such confining conditions can live for several months, but confined queens must be viewed as a temporary situation. Having a few extra queens in reserve can really speed things along next Spring and Summer when the occasional "queen emergency" arises.

New Equipment I will need to order enough equipment for three - four colonies. I will plan on two brood chambers and a couple of supers for each. You may be expecting that I will plan on getting the equipment from different manufacturers. I don't yet know about the foundation types that I will use. I have historically used the traditional wired foundation, but the newer plastic-based foundations are popular. Should I use products that I know will work or should I experiment with some of the newer products? I'll let you know.

I want to use both styles of outer covers - the telescoping and migratory types. The migratory covers should be lighter and cheaper, but the telescoping cover should offer better wintering capabilities. I hope to paint equipment from different manufacturers different colors. As with the queens and packages discussed above, I have no interest in technical evaluations, but am planning on color coding in order to know which company made it.

Used Equipment As with many beekeepers, I have acquired some used equipment. Much of it is little more than firewood, but I hate to totally eliminate anything. Used equipment is usually cheap when compared to the new stuff, but it requires time to bring it up to standards. Propolis and burr comb scraping is always a miserable job but it needs to be done. Next spring, those freshly scraped frames will slide into those freshly scraped hive bodies with professional ease. Cleaning and repairing used equipment is a job well suited for winter months when little else can be done in your beekeeping efforts. Though I feel good about the appearance of the newly housed hive in my used equipment, I still dread the task.

This time of year about all I can do is repair what I have, and plan on what to buy for next year. This really *needs some help.*

Next month In all honesty, I must write about a month behind what you read. By the time you and I talk again "next" month, spring will not be all that far away. With that admission, my immediate plans for the yard are to continue to clean things up, be certain that all my bees and equipment are ordered, and make a final decision on what types of hive stands I want to use. For those of you on the web, Editor Flottum and I will continue to develop that system and get it running in the virtual apiary. Now I'm off to do some bee yard work in order to show some progress. BC

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A Baker's Dozen For Selling Honey

Here's 13 ways to sell more honey

Mary & Bill Weaver

For beekeepers with the time, selling honey direct to the consumer is a good way to go. You get the full retail price for yourself that way. It's surprising how much honey folks we spoke with say they can sell that way, after they've built up a clientele.

1

Grant Stiles, New Jersey State Apiarist, who started with eight colonies in 1994, and currently runs 250, gave us some tips on how to go about developing that clientele more quickly. He suggested giving talks about bees and beekeeping to interested service clubs, AARP and senior groups, church groups, and even school groups.

"They're always looking for speakers," says Grant. "After you give an interesting talk, you can have some of your bottled honey at the back of the room to sell to interested folks after the meeting. Occasionally you won't sell much, but on average," Grant says, "50 to 75 percent of the people will buy at least a honey bear."

With that honey bear, they'll be taking home your name, address and phone number on the label, and if they like your honey, many will seek you out for more honey in the future.

According to Grant, if you do a good job on the first talk or two, you won't have to scout around too much for future talks. "You'll soon find yourself invited to 50 more," he says.

Grant and his wife, who do all the beekeeping, bottling, and delivering, have also gone to craft fairs and health food stores, are currently negotiating with the Shop Rite chain, make and sell beeswax candles and plaques, and are in the middle of constructing a new shop for honey and bee-related products.

2

Tommy Tolar of North Carolina mentioned another means of spreading the word about the honey you sell from home: Contact the newspapers. Several times, he says, the newspaper has come out to write an article about his beekeeping and honey-packing operation, and this has resulted each time in new customers.

He has built up to about 80 hives, and packs mostly in three-pound jars and quarts. He bottles and sells several barrels a year from home, with no advertising other than a "Honey For Sale" sign by the road. He uses a Dadant 20-frame extractor, and uncaps with a device similar to a jiggle knife, in a small outbuilding which he hopes to enlarge soon.

3

David Sasser, former president of the North Carolina Beekeepers Association, sells from his home, with people driving over 50 miles to purchase from him. He packs mostly in one-pound jars and quarts.

David has been keeping bees for over 50 years. He's down to only 30 colonies at present, due to ill health: He's had six heart attacks. He keeps on with beekeeping, he says, in spite of his health, because, "The bees are relaxing, mentally and physically."

4

Bill Lathan, also of North Carolina, who kept bees as a boy and got back into beekeeping 11 years ago, has grown quickly to his current 300 hives. To get full retail for his honey, he sells a lot of it from home.

Craft fairs also provide useful outlets for his honey. He sets up at fairs with an eight-foot folding table, covered with a cloth printed with honey bees, and has a hive cage borrowed from the state of North Carolina, in which he can put a hive.

For interested potential customers, Bill can open the hive inside the cage and show how the hive looks inside, with capped honey, brood, pollen, and sometimes he even finds the queen.

The caged hive is a good conversation starter, and on a weekend, he can expect to sell maybe 10 cases of quarts and 75 honey bears, plus smaller amounts of other packs.

He wholesales all his cotton honey (a delicious, light honey that crystallizes easily) to another beekeeper who uses it as a starter for creamed honey.

Continued on Next Page

5

If you're going to spend the time sitting at a market stand to sell your honey, you'll raise your profits and attract additional customers to your stand by having more products to sell. Brady Mullinax, for example, the man primarily responsible for getting the honey bee declared the state insect of North Carolina in 1972, and his wife Mary have added home-baked products to their honey at their market stand.

Mary bakes, each market day, her very popular honey/oat/wheat biscuits made with yeast. One recipe makes 50 biscuits. She uses their dark honey in baking. Mary slides the finished pan of 10 rolls onto an inexpensive paper plate, and slips it into a gallon freezer zip-loc plastic bag. She charges 37-1/2 cents a roll.

Brady himself bakes white bread for the stand (not made with honey.). He sells a one-pound loaf for $2.85, or two for $5.00. He can easily sell 48 loaves in about two hours.

6

Dennis Waid of New York makes candles to provide additional sales at the two market stands manned by himself and his wife, where he sells most of the honey from their 180 hives. (The Corning Glass Center Gift Shop and the airport gift shop provide additional sales, and he also sells gift packs of three jars to tourists on the Finger Lakes Wine Trail.) He makes dipped, molded, and hand-rolled candles, and says he can't make dipped and molded candles fast enough for the demands, using all his wax in addition to wax bought from other beekeepers.

Dennis also sells a beeswax hand cream, made and bottled by fellow beekeeper Robert Kime. A yogurt manufacturer and a Mennonite store purchase some of his honey by the 60-pound pail, and former tourists send in orders from all over the country, which Dennis fills by UPS.

7

Walt Broughton, of southeastern Pennsylvania, attends about a dozen music festivals each Fall, where he sells quite a bit of the honey produced by his 60 hives. At the festivals, and at several craft fairs, he sets up a large display comprising several tables, including an observation hive, pollen, propolis, several types of honey and creamed honey, flavored honey, comb honey, candles, wax ornaments, honey straws – the whole nine yards! The display takes about two hours to set up, Walt says, but its size attracts a lot of attention and customers. He started with two hives in 1984.

8

Jim Steinhouer, Pennsylvania State Apiarist, who has 20 hives, sells most of his crop, bottled mostly in two-pound and five-pound jars, to friends at his and his wife's places of employment, and to personal friends also. He uses a two-frame, hand-operated extractor, and extracts in the basement.

9

Jack and Peggy Trexler of North Carolina, with about 35 hives, have been selling honey from home for many years. They make provisions for customers to taste their various types of honey to see which they like best. Peggy keeps a supply of plastic bears of each variety in the cupboard, and squeezes out samples onto plastic spoons. They have a small honey house, built many years ago, uncap with a heated knife, and extract with a 10-frame radial extractor.

10

Hugh Madison sells a lot of his honey from home. He lives near Pinehurst, North Carolina, a golf capital. Many retirees come from the North to settle here, "building big, fancy houses," according to Hugh, and they like his local honey.

Hugh is the only beekeeper we spoke with who "planted for the bees." He puts out a couple of acres of buckwheat a year, which, on his sandy soil, produces abundant nectar. Buckwheat is one of his most popular honeys.

11

When we called Bob Hughes, near Trenton, New Jersey, he was in the middle of painting a lift he'd recently built to lift supers.

"I started with one colony 15 years ago," he said, "and then I lost my head." He now has almost 200 hives, which averaged between 95 and 115 pounds the past two years, and they're all located within 15 miles of Trenton, a heavily populated area!

Bob used to go to shows, county fairs and craft fairs taking with him an observation hive to attract attention. Now he sells at home and "from mom and pop stores to supermarkets." "God's been good to me," Bob says. "I've never had to look hard for customers. I always had people come to me. I can't produce enough. I buy in from friends who don't want to bottle and sell, or can't."

Bob allows customers who buy from his home to return their washed jars to be refilled, and the customers appreciate the savings. He says, "In selling honey, the most important things are clarity and quality of product and fairness, and remember – the customer is always right!"

12

Mike Griggs, a Cornell University vegetable researcher, has about 10 hives, and sells most of his production to family and friends and at a local fair. At the fair, he and Kathy also sell molded beeswax candles. They extract in the garage with a six-frame electric extractor and have, Bob says, "kind of developed a niche

for his unheated, crudely filtered honey," for which he charges $2 a pound.

Mike also sells several five-gallon buckets of honey a year to a Buddhist monastery!

13

A Pennsylvania beekeeper with whom we spoke, currently with 400 hives, has given up bottling as too time-consuming, and sells all his honey, heated and strained, by the bucket, to a variety of businesses, including several bakeries, and a bologna and a honey mustard manufacturer. You don't make the markup on heated, strained honey by the bucket that you do with bottled honey, but at least you can get significantly more than the current low price per pound in barrels.

If you look around, you'll be surprised at the number of businesses you'll find who use heated, strained honey, purchased by the bucket. BC

Mary and Bill Weaver are producer/packers from Pennsylvania.

INNER ... Cont. From Pg. 6

The west, for the most part has been dry and warm at least in the southern regions. Northwest has been cool, but not too cool and wet. Some pollination delays have been noted, but not significant, at least yet. The freeze that caught the orange growers by surprise was an aberration blamed on the Niña patterns I'm told.

The Midwest and the east have had a good old fashioned Winter, although it arrived just a bit late. For only the second time in a dozen Winters here my driveway was impassible and needed plowing. Ice, rain, snow, more ice, wind . . . well, you can't say you weren't warned, but it sure has been a pain.

•

Elsewhere in this issue there are pages and pages of information gleaned from the talks at the Federation meeting, and Tom Sanford puts forth the very latest on the Small Hive Beetle way in the back. There's lots to learn when attending a meeting like this and I am always impressed with the rest of the events also.

But one thing not mentioned in that article, and not really a part of the meeting per se was a perceptible difference in the cooperative attitude displayed by the researchers from the USDA. I don't mean to say they have been uncooperative in the past, nor do I think any of the individuals involved have been anything but amendable.

What I think has changed, for the better, has been the direction from the top. I've attended upper level USDA meetings in the past where the prevailing attitude was "we know best, we'll tell you what to do, don't bother us we have lots of *important* things to do." I didn't get any of that at this meeting, and the practical, applied work coming out of all of the bee labs seems to me to reflect this.

I may be wrong, and I certainly don't want to accuse anybody of things incorrectly. But I wasn't the only person to notice this. If there's been a change it is welcomed by all of us who benefit from the work these frontline people do. I'll bet they welcome it, too.

•

Another topic not covered in that article was the vendors who attended. Each year there are always a few new gadgets and gizmos to look at, or at least items relatively new that most attendees haven't had a chance to see up close and personal. But this year was exceptional for the number and variety of new products that showed up.

Several models of extractors from Europe were there. New, and comparatively inexpensive bottling machines, hive loaders, in-hive feeders, smoker fuel, plastic frames, hive dividers, hive tools, bee suits, entrance feeders, honey strainers, wax handling equipment . . . like I said, a lot of new things showing up. Check your catalogs carefully this year.

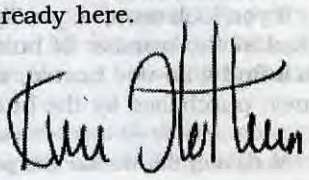
One item, though not new this year, has gained a lot of attention recently, and that's already-assembled hive equipment. We've come full circle in the last 120 years or so, when all wooden equipment was sent, on the train, already assembled. I think it was A.I. Root who pioneered sending equipment 'broken down' to save space and freight costs.

About three years ago Jim Tew and I were at a meeting and during one of the breaks we were trying to figure out how to get more gardeners started in the craft. One of the surveys *Bee Culture* had done previously trying to find the right button to push on these people was that there was some reluctance to begin a career in woodworking when all they wanted was more apples.

Jim and I decided then that, like all good service companies, the easier you make it to do, the more likely you are to get people to do it. Jim and I probably didn't have this idea first, but it was right then, and it's right now. I commend those who are making it easier for anyone to get started in this craft. I hear they're selling faster than they can be put together by the way.

•

Finally, we have not forgotten, nor forsaken the promised articles on races of bees, or The Topsfield Fair. It's back to business as usual (as if that were possible in this business) next month, and we'll pick up where we left off. So, until then, get your hive tool sharpened, try some of that new smoker fuel so your smoker stays lit (up to six hours I'm told), and get ready . . . another season is already here.



We Need People Like This

YORKSHIRE BEEKEEPERS GET BUILDING

With near perfect weather, over 500 people gathered to witness the Marquis of Normanby unveil the foundation stone commemorating the opening of the new Apiculture Centre on the first day of the 141st Great Yorkshire Show. He was assisted by Grania, the Marchioness of Normanby. How lucky Yorkshire beekeepers are to have such a lovely building, complete with clock tower (showing the correct time) and enhanced with beautiful hanging baskets of trailing fuchsias.

The President, Lt. Col Young, supported by the Association's principal officers, received his Lordship on behalf of the Associaiton. The party also included the Marchioness, Lord Normanby's three sisters (acting in the capacity of Trustees of the Normanby Charitable Trust) and the younger members of the Normanby family. In addition, the Lord Gisborough, Lieutenant of Cleveland, and Lady Gisborough, together with the President, Past Presidents, Honorary Show Director, Honorary Show Director Elect and Executive members of the Yorkshire Agricultural Society were present. Representatives from the British, Scottish, Welsh and Ulster beekeepers were also in attendance.

Colonel Young gave an excellent recital of the long and happy association between the Yorkshire Beekeepers' Association and the Yorkshire Agricultural Society since 1885. He emphasized that the relationship extended way beyond the majority of the cattle-breeding societies which had yet to be formed in those early days.

Thanks were given to the Yorkshire Agricultural Society for the generous support in affording us the land, and to all those who, over the last 20 years have given all forms of support and funds to the project, especially our major benefactor. The Normanby Charitable Trust. The President gave special thanks to Michael Badger for undertaking the task of obtaining the funds and organising the day's event.

Following the unveiling of the enormous foundation stone (I am told it weighs almost two tons), which had been suitably inscribed for the occasion, our guests toured the new facility and talked to the members. A special souvenir program was handed out which included a brief history of the original bee garden.

The building is of western red cedar in a cricket pavilion-style frontage. The clock turret is constructed to receive a weather vane which is being made by a member of a District Association. The interior has been cladded out with display boards. The exhibition area supported the National Bee Unit, BIBBA and the YBKA information stand.

Following the various photocalls, several of the original bee garden team were observed rekindling past friendships and, no doubt, memories. I believe they were pleased that their early works had been appreciated in the continuance of the new Apiculture Centre.

I was very impressed with the overall setting of the facility. There is a well-laid out area for the demonstration of live bees, and a well-stocked observation hive, manned by people who were able to field an array of answers to all sorts of queries concerning bees and their environment.

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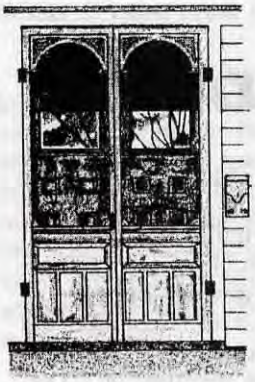


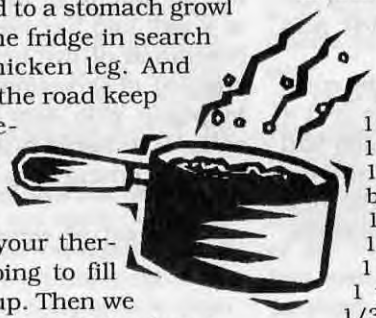
Ann Harman

Home Harmony

Time For Lunch

February is a great month for projects. Some of you don't belong to the Procrastinators Association and are actually planning to repair, refurbish and build bee equipment. Those of you who haven't even thought about that project yet might be inspired by this month's recipes. And those of you whose project is moving bees out of this crop into that crop need to be well fed.

Lunch can be a forgotten meal especially when projects are going well. We respond to a stomach growl with a visit to the fridge in search of a leftover chicken leg. And those of you on the road keep hoping something is left at the bottom of a potato chip bag.



So get out your thermos. We are going to fill it with some soup. Then we will have a sandwich. Better buy a new bag of chips. And because we are working so hard we'll have some cookies to finish out our lunch.

True, you can open a can and in a few seconds have a bowl of soup. But on a nice quiet day, perhaps on the weekend, you can make a pot of soup. Soup freezes well - just pour single portions into freezer bags, seal shut and pop them into the freezer. Then the soup can be heated up either in the microwave or on the stove. You can thaw and warm soup on the truck engine but do not use a plastic bag - it may melt and coat your engine nicely with your favorite soup.

Give some thought to sandwich fillings. There is nothing worse than a filling that oozes out down your fingers. Hammer handles and steering wheels do not need a coat of goo. One thing a good sandwich needs is bread - not just any old bread, but a nice hearty loaf, sliced a bit thick to hold the filling in well. Bake the bread, slice it, then freeze the slices. In this way you can make a sandwich in a hurry

HONEY OF A CHILI

I realize that there are as many chili recipes as there are people in Texas, but this recipe does use honey. Certainly you can add your own blend of seasonings. A wide-mouth thermos full of tasty chili will make your projects seem easier.

4 cups ground beef
1 cup chopped onions
1 cup diced celery
1 quart cooked or canned red beans
1 pint tomato puree
1 pint water
1 tablespoon salt
1 teaspoon chili powder
1/3 cup honey

Fry ground beef, onions and celery slowly until done. Place beans, tomato puree, water and salt in a saucepan. Bring to a boil. Add meat and vegetables. Let simmer slowly for 2 hours. Add chili powder. Stir in honey just before serving.

Nature's Golden Treasure Honey Cookbook
Joe M. Parkhill

BLACK BEAN SOUP WITH CUMIN

A good bean soup is another of those hearty soups that we all enjoy. This next recipe uses cumin for flavor along with some vegetables.

1 cup dried black beans, washed
1 large onion, finely chopped (1 cup)
1 to 2 tablespoons oil
1/2 cup diced carrots
3/4 teaspoon crushed cumin seeds
1 to 1-1/2 cups water
7 cups chicken, beef or vegetable broth (homemade or canned)
1 large garlic clove, pressed
1/4 cup diced celery
1/4 teaspoon pepper
1/4 teaspoon salt
1/4 cup honey

Cover beans with cold water. Let soak 8 hours or overnight. OR combine beans with 4 cups water and bring to boiling. Boil for 2 minutes. Let stand 1 hour. Drain beans.
Combine beans with broth in saucepan. Bring to boiling. Lower heat and simmer, partially covered, for 2-1/2 to 3 hours or until very tender. Sauté onion and garlic in oil in medium-sized skillet until softened, about 3 minutes. Stir in carrots and celery. Cook, stirring, for 1 minute. Add to beans. Season soup with cumin, pepper and salt. Simmer 30 minutes. In batches, transfer soup to blender or food processor and whirl until pureed. Return to saucepan. Add 1 to 1-1/2 cups water to achieve desired consistency. Add honey. Gently heat soup.

Kansas Honey Producers Cookbook

SWEET AND SOUR CORN SOUP

Here is a recipe for a light soup to go with some hearty sandwiches. Since you can use frozen corn kernels, this soup is very quickly made.

4 cups chicken stock
2 cups corn kernels, cooked
1 tablespoon flour
1 tablespoon honey
2 tablespoons cider vinegar
1 tablespoon soy sauce
1 scallion, minced

Bring the stock to a boil, then add the corn. Reduce heat and simmer for 3 minutes. Stir in the flour and the remaining ingredients and simmer for 5 minutes more.

Mississippi Homegrown
Mississippi Beekeeper's Association

HONEY AND BEER WHOLE WHEAT BREAD

Now for the bread to make the sandwiches. This is a really good whole wheat loaf. You can choose

any sandwich filling you wish - ham and cheese, thinly sliced deli meats, various luncheon meats or sliced roast turkey breast.

1-1/4 cups beer or ale (one 12-ounce can)
1 teaspoon honey
1-1/2 tablespoons dry yeast
1/4 cup light oil
1/3 cup honey
2 teaspoons salt
2 cups unbleached white flour
3-1/2 cups whole wheat flour, approximately, (preferably stone-ground)

Heat the beer until it's warm (not over 110°F). Pour it into a large mixing bowl and stir in the 1 teaspoon honey and the yeast. Let it sit until the yeast has dissolved and is bubbly. Add the oil, honey and salt. Add the 2 cups white flour and beat 2 minutes with an electric mixer. Gradually add 3 cups whole wheat flour or as much as it takes to form a dough that pulls away from the sides of the bowl. Turn the dough out onto a floured board and knead, sprinkling on a little more whole wheat flour if necessary, until the dough is smooth and elastic. If it remains slightly clingy, never mind; the important thing is that it be resilient. Put dough into a buttered bowl, turn it over or brush the top with melted butter, cover with a damp cloth and let it rise until doubled in size. Punch dough down, turn it out onto the board, knead it a few times to press out air bubbles. Cut in half, cover and let it rest for 10 to 15 minutes. Grease 2 small to medium loaf pans. Shape the pieces of dough into loaves, put in pans and brush the tops with melted butter or make free-form ovals and place on a buttered baking sheet dusted with cornmeal. Cover with the cloth and let loaves rise again until about doubled in size. Bake at 350° for 30 to 40 minutes or until the bottoms of the loaves sound hollow when tapped. Cool on a rack. Makes two loaves.

The Garden Way Bread Book
Ellen Foscue Johnson

CHEWY HONEY NUT COOKIES

Now for the cookies. You might wish to take along to the workshop or truck some extra cookies for mid-afternoon coffee. These are delightfully chewy so you won't get crumbs all over your workshop or truck.

2 cups flour
1 teaspoon salt
1/2 teaspoon baking powder
1/2 teaspoon baking soda
1/2 cup butter or margarine
1 cup honey
1/2 cup dairy sour cream
2 teaspoons vanilla
2 cups raisins
1 cup quick-cooking rolled oats
1 cup chopped walnuts

Combine dry ingredients in small bowl; mix well and set aside. Cream butter in large bowl with electric mixer; beat in honey in fine stream until blended. Stir in sour cream and vanilla. Blend in flour mixture and raisins, oats and walnuts. Cover and refrigerate dough about 30 minutes. Drop dough by rounded teaspoons onto well greased cookie sheets. Place cookie sheet above center of 325° oven. Bake 20 to 25 minutes or until lightly browned. Let cookies stand 1 minute, then remove to wire racks to cool. Makes 4 dozen cookies.

Sweetened With Honey The Natural Way
National Honey Board

For those of you who have put off fixing up all that equipment, this good lunch to take to the workshop should really give you a good start. For those already working away, this lunch is a just reward. And for those of you heading for the next pollination site, this lunch should give you renewed energy, especially if you are stuck in the mud. BC

?Do You Know? Answers

1. **True** Races in bees are like breeds in animals and varieties in plants. Being of the same species, these races can interbreed and produce viable offspring.
2. **False** The eastern honey bee (*Apis cerana*) and western honey bee (*Apis mellifera*) are two species of bees which are closely related to each other. While neither species are native to North America, the western or European honey bee is the one that is kept and managed by beekeepers in North America. The eastern honey bee is found in the far east with a distribution ranging from West Afghanistan to Japan.
3. **False** A three pound package of bees consists of approximately 10,500 workers and a mated queen caged separately. Normally the workers are not related to the queen. On the day the packages are to be made up, work crews move to the apiaries where they shake bees into funnels to fill the packages. Packages often contain bees from two or more colonies. A second crew goes to the queen mating yard where they begin caging queens from the mating nucs. These caged queens are added to the packages back at the warehouse and the packages are shipped the same day.
4. **True** An individual needs to decide what type of honey they are going to produce before they begin purchasing their equipment, especially frames and foundation. There are two basic types of comb foundation, distinguished by their relative thickness. Thin surplus foundation is used to produce section comb honey, chunk honey, or cut-comb honey. Thick or heavy foundation should be used in the brood chamber and in frames for producing extracted honey. Thicker foundations often are reinforced with vertical wires, thin sheets of plastic, metal edges or nylon threads.
5. **True** The 10-frame Langstroth hive has become the "standard" for the North American beekeeping industry. The original Langstroth internal hive dimensions (length and width) have survived the test of time. Several variations of the standard hive are used to a limited degree and include an 8 frame hive and 12 frame jumbo hive.
6. **False** The full-depth hive body is 9-5/8 inches high and is often used for brood rearing. These large units provide adequate space, with minimum interruption, for large solid brood areas. They are also suitable for honey supers. However, when filled with honey, they weigh over 80 pounds and are heavy to handle.
7. **False** While placing dry sugar on the inner cover in the spring is a quick attempt in providing food, it is not an efficient way to increase food stores. To take full advantage of the dry sugar, colonies must be strong, temperatures warm enough so the cluster can be broken, and adequate moisture must be available. In some instances, bees will carry dry sugar out of the hive and discard it. This feeding approach is not well suited to colonies that need food immediately to survive.
8. **False** Hive top feeders are made of wood or plastic that cover the top of the hive and are used for the feeding of large quantities of sugar syrup.
9. **True** The inner cover provides an air space just under the outer cover for insulation. During summer, the inner cover protects the interior of the hive from the direct rays of the sun. During winter, it prevents moisture-laden air from directly contacting cold surfaces.
10. Top bar, end bars, and bottom bar.
11. Abundance of pollen and nectar plants in the area;
    Number of other colonies within flying range of the apiary.
12. The primary colony reaction to smoke is the initiation of engorging behavior. Individual bees move to cells of nectar and honey and proceed to fill their honey stomachs. In addition, smoke repels bees downward. Other colony reactions to smoke include a reduction in the number of guard bees at the hive entrance and a decrease in the number of foragers leaving for the field.
13. Frames of capped brood should be added to packages when they are installed if available, since during the first 21 days after installation, a package bee colony experiences about a 35 percent loss in population. This loss occurs because workers require 21 days to develop from eggs, during which time the older bees of the population die. After this period, the rate of emergence of young workers begins to exceed the rate of death of older bees as the population grows. About four weeks after the installation, the population is completely restored. Adding capped brood will mean that new bees will begin emerging shortly after installation and the colony gets off to a faster start.
14. Package bees should be installed in late afternoon or early evening when there is little opportunity for flight or drifting between colonies. This allows the colonies to get settled before they actively start flying the following morning.
15. Prior to installation, a package is normally sprayed with water or sugar syrup so the bee's wings become wet. This greatly reduces bee flight and the mass of wet bees is easily dumped from the package into the hive.
16. A package should not be disturbed after it is installed for approximately 7-10 days except to feed the colony as it is needed and to remove the queen cage. Extensive hive manipulations or a large disturbance may cause the workers to ball their queen.
17. A beginner beekeeper should start with at least two colonies of honey bees because of the possibility of queen failure. Having more than one colony allows the beginner to take brood from a queenright colony and salvage the colony in which the queen has failed. Also having more than one colony gives the new beekeeper a better sense of what to expect as colonies grow and develop, since colonies are rarely

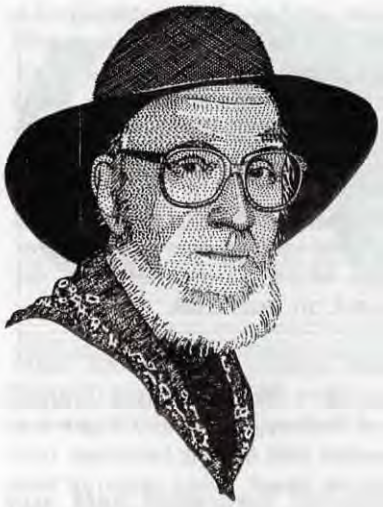
equal.

18. Nucleus colonies have many uses other than establishing new colonies. They are often used as mating nucs into which ripe queen cells are introduced, for holding or banking spare queens until they are needed, pollination units for plant breeding cages/greenhouses and serve as a means by which a new queen can be introduced to a colony that is being requeened.
19. The advantages of starting a hive with a nucleus colony rather than a package are: the faster rate of development due to presence of brood and no break in the queen's laying cycle; ease of establishing the unit in your own equipment; and the chance of seeing the unit before purchasing it. A nuc usually expands rapidly into a strong colony and has a better chance of producing surplus honey during the first season.

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

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

Clarence Collison is a Professor of Entomology and Head of the Department of Entomology and Plant Pathology at Mississippi State University, Mississippi State, MS.



Richard Taylor

Bee Talk

"I want to talk about the modern beehive and how it came to be invented."

I just finished sending out several hundred packets of Evodia seeds, in response to requests from readers – a seemingly endless task, far less simple than it might seem. This was, I think, the fourth year I have done that, and the only way I can do it with any efficiency is by a sort of assembly line system. For that reason, I that requested readers enclose three stamps and an address label, nothing else – no notes, no money, nothing. Quite a few readers enclosed notes, telling me they would like some Evodia seeds. I also got a lot of paper clips and, worst of all, stamped envelopes, which were totally useless. And all this made me wonder: If the law requires that pesticides be used in exact accordance with directions, how many people are going to be able to heed those directions?

Ah well, nothing is perfect. Come Spring, I'm going to try to devise a way to send out some of the hundreds of Evodia seedlings that will spring up in my yard. If I succeed, then I shall place an announcement to that effect in the *May issue* of this magazine. So check then, if you are interested.

Now I want to talk about the modern beehive and how it came to be invented.

This hive, used throughout the world, is almost entirely the invention of the great American beekeeper, Lorenzo Langstroth, who died in 1895 at the age of 85. It is in many ways an object of the utmost simplicity, but it embodies an elementary principle that was Langstroth's discovery, and which constitutes the foundation of modern beekeeping. That principle is, simply, that bees respect a space of about three-eighths of an inch, that is a space just large enough for them to move about. What is important about that simple fact is that, so long as the parts of a hive are separated by that distance, the bees will leave those spaces empty, neither building comb therein nor gluing such parts together with propolis. It is for this reason that a populous and well-established hive can in a few minutes be entirely dismantled, all of its combs removed, and then reassembled without the slightest damage and only minimal disturbance to the colony.

Prior to Langstroth's invention, bees were, over thousands of years, kept mostly in whatever crude receptacles were at hand, such as boxes, clay pots, hollow logs and whatnot. Eventually straw baskets, called skeps, were devised. Honey harvests from such hives were crude, messy, difficult and inefficient, and usually involved destroying the bees with brimstone fumes.

The manner of Langstroth's discovery is rather interesting. By this time "bar hives" had been developed, that is, hives in which the bees suspended their combs from wooden bars laid across the top. Some researchers, noting this, have erroneously suggested that Langstroth was not the inventor of the moveable frame after all, but that is to miss the real point of his discovery. When the cover was placed on a hive fitted with such bars, the bees promptly glued the cover down to the bars with propolis. In order to make the removal of the cover easier, then, Langstroth tried lowering the bars a bit, to leave a space between the *underside* of the cover and the *tops* of the bars. This is, of course, the opposite of how one would normally try to accomplish this result. That is, it would first suggest itself that if you eliminated any space between covers and bars, so that the bees could not get between them, then they would not be able to stick them together easily. But that did not work; the bees glued them together as best they could, that is, quite thoroughly, so that the cover could hardly be removed without great damage to the combs suspended from the bars. Having, then, tried the opposite, that is, having left a space there, Langstroth was pleasantly astonished to find that the bees had left that space entirely empty, and that the cover could then be lifted with ease. Luckily, he had left just the right space, not too large and not too small. That was the simple first step to his momentous discovery, whose great significance he did not immediately see.

When the bees built their combs down from bars, in the hives common in Langstroth's day, they fastened the sides of the combs to the inside of the hive, just as they had done for millions of years in bee trees. Therefore, if a beekeeper wanted to remove one of these combs, he had to cut it from the sides of the hive, a messy and time-consuming job that damaged the delicate combs. But then all of a sudden one evening, Langstroth realized that the principle of the bee space,

Continued on Next Page

BEE TALK ... Cont. From Pg. 47

which he had discovered by creating a space beneath the cover, could also be applied to the edges of the combs, and he at the same time realized the wonderful significance of this. That is, he speculated, the bar from which the bees suspended their combs could be supplied with ends and bottom, so designed as to leave that space between the frame thus created and the inside walls of the hive. Thus was born the moveable frame, and thus was laid the foundation of modern beekeeping.

I have held in my hands Langstroth's journal, in which he recorded this discovery, and in which he drew the first crude diagrams of a moveable frame. That journal is today, of course, the most precious item in all the literature of beekeeping.

Langstroth lived to a considerable age, and within his lifetime saw beekeeping revolutionized by his discovery. He never profited from it, however. Much of his later life was beset by severe mental illness, and he died relatively poor. He was a clergyman, whose frequent lapses into severe melancholy incapacitated him for long periods, not only for beekeeping, but for the ministry as well, so that he had no regular pastorate except for brief periods early in life. He often preached in various churches, however, and by the end of his life enjoyed the veneration of beekeepers throughout the world. He is rightly considered to have been America's greatest beekeeper. During his own lifetime, this great reputation resulted less from his invention of the moveable frame than from his masterful book, *The Hive and the Honey Bee*, which is probably the greatest single treatise on apiculture ever written, and which he composed in a single Winter. Langstroth's life had, in an excessive measure, the tragic quality that so frequently accompanies great genius, yet at the same time, it was heroic, and will never cease to inspire anyone who learns of it. He was a man of profound but undogmatic devotion, and he died suddenly of a stroke, just as he was beginning to deliver a sermon, seated in a chair before a congregation. His final words, of unbelievable beauty, were these: "I want to speak to you of God's love; of what it has meant to me, of what it means to me now, and what it will mean to me . . ." – a declaration which he did not, and did not need, to finish. BC

The above is excerpted, with changes, from the author's How-To-Do-It Book of Beekeeping. *Richard Taylor is a philosopher and lifelong beekeeper who lives in the Finger Lakes region of New York. You can reach him at Box 352, Interlaken, NY 14847.*

Glean gs

FEBRUARY, 1999 • ALL THE NEWS THAT FITS

For Her Humann Touch

MARY WINS THE BEAR

Mary Humann

The 1999 Dutch Gold Honey Bear award is given annually to an individual in the beekeeping industry that has made a significant personal contribution to the industry. This year's recipient is Mary R. Humann, former marketing Director of the National Honey Board.

Prior to her tenure at the National Honey Board, Mary was the public relations director for the National Potato Board. She is a graduate of Colorado State University in Fort Collins, with a Bachelor of Arts degree in technical journalism.

Mary's leadership and marketing expertise were pivotal in the founding of the National Honey Board's advertising and public relations programs. She successfully enhanced the image of honey and its usefulness through public relations programs that educated magazine editors, news reporters and other media contacts. The honey industry benefited enormously from the numerous articles that were written by these individuals describing honey's all-natural and wholesome attributes.

Mary coordinated the market research that enabled the honey industry to better understand the honey consumer. By incorporating these findings into advertising programs, Humann kept honey in the forefront of the busy consumer's mind. She also visited food manufacturers and spoke about the functional characteristics of honey and why it was an important ingredient to include in food products.

Mary resigned from the National Honey Board in December of 1998 to launch her own marketing communications consulting firm – The Humann Factor. She will now serve the National Honey Board and other organizations as a consultant.

Mary resides in Loveland, CO with her husband Ray and daughters, Samantha, 8 and Alexis, 4.

Dutch Gold Honey and the Gamber family congratulate Mary on her dedication to promoting our industry and our pure and wholesome product.

The Dutch Gold Honey Bear is awarded in honor of Luella and Ralph Gamber, the founders of Dutch Gold Honey, Inc. The bronze honey bear on a walnut base, is a replica of the original model created by Woodrow Miller and W. Ralph Gamber in 1957. A $2,500 bee research grant in honor of Mary R. Humann will be presented to the institution of her choice.

Bee Culture adds our congratulations and appreciation to Mary. For the first few years the Honey Board was in existance, Mary *was* the Honey Board, attending meetings, answering phones and being the face, the voice and the 'being' of the group. We will miss you. We are better because you were here.

TOUGH SEASON IN CARIBBEAN

Tropical hurricane Georges, made heavy losses to beekeeping in the Caribbean region, known also as the West Indies. To supply the local markets, imports had to be made from nations in North, Central and South America.

English speaking nations like Barbados, Grenada, Saint Kitts-Nevis, had an underdeveloped honey industry. The hurricane destroyed too many trees so honey production will be reduced in a couple of years. They will depend on imports to supply their national markets.

In the French speaking Caribbean like Guadeloupe, Martinique and Haiti, they got heavy losses of trees, so honey production will be reduced, too. Guadeloupe and Martinique will depend on imports to supply their markets. But in Haiti they don't have enough money to pay for imports, so they will have to live without honey.

The Dutch speaking Caribbean was not affected by the hurricane and they don't have honey bees. Usually they depend on imports to supply the local markets.

In the Spanish speaking Caribbean, Cuba, Dominican Republic and Puerto Rico, many bee colonies were destroyed as well as the majority of trees that provide food for them. Let's see with more details.

Cuba – the only Communist nation in the American Hemisphere, doesn't have a national market. The honey production is exported to Eastern Europe and Russia. It will have a reduction in exports.

Dominican Republic has a good beekeeping industry and a national market. Excess production is exported to Puerto Rico. It will have a reduction in exports.

Puerto Rico has a good beekeeping industry and the national market has a good consumption of honey. The majority of the market

Continued on Next Page

USDA GOALS FOR '99

At a year-end press conference, Agriculture Secretary Dan Glickman said the Department would focus on seven key priorities in 1999:

Strengthening the farm safety net through major crop insurance reform, ensuring that no farmer or rancher loses his or her land because of an act of God.

Further expanding trade opportunities for American farmers.

Expanding anti-hunger activities and the school breakfast program, and increasing food rescue and gleaning efforts through partnerships and community involvement.

Extending implementation of the new, science-based meat and poultry inspection system to about 2,500 small plants across the country.

Expanding research to improve all of USDA's work, from nutrition to food safety to sustainable agriculture.

Issuing national organic standards that are good for farmers and consumers.

Continuing efforts to fairly address long-standing civil rights issues.

NEW YELLOWJACKET TRAP

The first effective lure for the golden paper wasp, the European hornet and some of the nation's peskiest yellowjacket species has been developed at the Agricultural Research Service. ARS is the chief research agency of the U.S. Department of Agriculture.

"Yellowjackets and wasps can be dangerous to workers in fruit orchards during picking season as well as around homes and other public places," said Peter J. Landolt, the ARS entomologist who developed the lure. As with bees, yellowjacket and wasp stings can cause a potentially dangerous allergic reaction in some people.

Sterling International, Inc., of Veradale, Wash., is working with Landolt under a Cooperative Research and Development Agreement to develop the best delivery system for the attractant. Landolt estimates that traps with these lures could be available commercially in about a year. He works at the ARS Yakima Agricultural Research Station in Wapato, Wash.

The new lure uses compounds created by bacteria and fungi as byproducts of consuming sugar. These chemicals create an odor desirable to yellowjackets, at least one species of paper wasp and a hornet. ARS has applied for a patent on the lure (appl. no. 09/041,056).

"Sugar or meat-based baits are effective, but have drawbacks," Landolt said. "Sugar-based baits also attract beneficial species such as honey bees, and meat rots too quickly to be practical."

Of the 17 yellowjacket species in the U.S., five are considered to be significant, aggressive pests. Existing synthetic lures attract only one of these species. Landolt's lure is the first to attract most of them, including the German yellowjacket. It is also the first chemical lure to attract any species of paper wasp.

Aggressive German yellowjackets were first found in the U.S.—in eastern states—about two decades ago. But they've been found in Washington and California only since the 1980's. "They cause real problems seasonally when they nest and feed in fruit orchards," Landolt said.

Both Need Bees

BETTER FRUIT, AND TREES

Gooseberry pie or currant jam may be in your future holiday menus if researchers are successful. Their goal: develop currant and gooseberry varieties with resistance to a disease called white pine blister rust.

The rust lives first in white pines and other five-needle pine species, then moves to currants and their relatives, then back to the pines. It doesn't bother currants much but can kill some pine trees. White pines are important to the lumber, landscape and Christmas tree industries. In an attempt to stop the spread of the disease, the U.S. Department of Agriculture prohibited commercial production of European cultivated currants from 1909 to 1966. Restrictions still exist in 15 states.

Now Agricultural Research Service scientists at the national Clonal Germplasm Repository in Corvallis, OR, along with researchers in several states and Canada, are looking for a genetic solution. They've identified several currant and gooseberry cultivars that resist the disease, and they're conducting a series of tests to quantify that resistance. They're also working with foresters who are producing disease-resistant white pine seedlings for reforestation.

Currants have shiny, translucent berries whose color ranges from black to deep red to clear. Native to north America and Europe, they are unrelated to the raisin-like Zante currants, made from grapes. Currants and their larger-fruited relatives, gooseberries, are popular in jams, juices, pastries and liqueurs in Europe. They are high in vitamin C and flavonoids, compounds being investigated for health benefits and nutraceutical properties. Currants and gooseberries grow best in the northern U.S.

BRITISH BUMBLEBEE EXTINCT

The World Wide Fund for Nature has declared the short-haired bumble bee extinct. It said the bee, *Bombus subterraneus,* was last sighted in the early 1980s near the coastal town of Dungeness in Kent. Two years of extensive searches in 1997 and 1998 failed to find any evidence of the bee. The bee lived in small colonies and built nests that stuck up from the ground. The tops of the nests were cut off when the fields were harvested.

This brings the total number of species extinct in Britain this century to 154. "The dramatic decline and extinction of our native species is a sad reflection on the 1981 Wildlife and Countryside Act and its inability to protect our natural heritage," said fund planning officer Carol Hatton. "We must have stronger legal protection before it's too late."

EMERGENCY RELIEF FOR FARMERS

The Fiscal Year 1999 Budget Bill included $2.375 billion for emergency financial assistance to farmers who suffered losses due to natural disasters. Farmers are eligible for compensation either for losses suffered to the 1998 crops (single year) or losses in any three or more crop years between 1994 and 1998 (multi-year). Farmers can receive payments under either the single year or multi-year provisions, but not both and USDA will make payments at the higher of the two levels. The plan includes help for farmers whose land was flooded for an extended period of time and for those whose crops suffered multiple outbreaks of fusarium head blight (scab). USDA will use an estimated $400 million as incentive payments to all farmers to purchase higher levels of crop insurance for their 1999 crops. USDA will also make available compensation to farmers with crop land that is flooded and expected to be out of production indefinitely, and not eligible for prevented-planting crop insurance coverage. Sign up will begin February 1, 1999. Farmers should contact their local USD Service Center or Farm Service Agency office at that time for more information.

CARIBBEAN ... Cont. From Pg. 49

is supplied with imports.

Honey is imported from Dominican Republic and the United States. Distributors prefer the Dominican honey because it has a low price, so they supply more than 50% of the demand. American honey has the highest price and there is only one distributor with the Goya brand.

In Puerto Rico, hurricane Georges created heavy rains and winds at 150 kilometers an hour. That destroyed bee colonies and the majority of the trees.

For example, the municipality of honey is considered a forest or wood area by the Soil Conservation Services of the USDA.

Puerto Rico will have to import more honey from United States, Mexico or Argentina. And it will take several years before the number of trees go back to normal.

The Department of Agriculture of Puerto Rico has a program to support beekeeping. The beekeepers buy equipment and tools and pay in full, then the government sends them a check covering 50% of the expenses.

Islands hit by the hurricane lost electricity, so consumers bought all available candles.

Production of wax will go down during the next few years. For example Puerto Rico exports wax to a company in Kentucky. Candles are imported from the United States and other nations from Latin America.

by Lewis Medina

HONEY BOARD NEWS

The National Honey Board has joined with the Florida Citrus Commission to sponsor a nationwide supermarket promotion. A brochure that promotes the healthful properties of both honey and grapefruit was produced and is available in the produce sections on specially marked citrus bins installed in 3,000 stores. 7,000 additional stores will be offered the opportunity to receive the promotion, which began in November and will run 8-9 months.

"Last year, grapefruit partnered with Kool-Aid for a very successful program. This year, they're thrilled to have a like-minded health-oriented partner like honey to work with," said Gretchen Lichtenwalner, marketing director for the National Honey Board. One million copies of the leaflet were printed. Look for this colorful brochure, which includes recipes, grapefruit tips and honey hints, at your local grocery store.

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The popular eye-catching hang tag is going on sale. Due to excess inventory, the National Honey Board is offering a "buy one, get one free" special. Tags are sold in packs of 500 for $20 and for this special sales you get one package free! The full-color hang tags have honey use and storage information as well as easy, delicious honey recipes. This is a great opportunity to get your honey noticed by consumers and retailers alike.

"The hang tags are a great success," says Sherry Jennings, executive vice president of the National Honey Board, "at only two cents per tag we hope the industry takes advantage of this great price to help sweeten their honey sales."

For more information about the hang tag sale or to order hang tags t this great price, please contact us at 1-800-553-7162.

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A new advertising campaign focusing on healthy eating and honey's part in a good-for-you diet is underway. The National Honey Board will place honey advertisements in 13,000 supermarkets (about two-thirds of U.S. supermarkets) across the country from December 28 to January 24. Shopping cart ads will feature the honey squeeze bear telling shoppers to give their honey a squeeze and directing them to the honey section for more information. Once at the honey section, shoppers will be offered "take one" brochures that describe how honey has been used historically to promote health, use ideas featuring simple ways honey can add flavor and goodness to everyday foods and a write-in offer for a free copy of the "Honey for Health" brochure. A similar campaign, conducted in a limited market in 1994, resulted in a 14 percent increase in honey sales during the promotion.

If you would like a list of participating retailers or accounts in your area, visit the Honey Board's Web site at www.nhb.org and click on "in-store advertising."

Trade Leads Provided
HONEY BOARD SERVICE

The National Honey Board is continuing the International Trade Lead Service which helps U.S. honey exporters identify new sales opportunities in international markets. Trade leads from international buyers generated several ways: through a marketing firm in the Middle East, international trade shows, trade journals, and from Internet inquiries. Information is then sent by fax to service subscribers who pay an annual fee of $60.

"We're continually working to improve this service," said Sherry Jennings, executive vice president of the National Honey Board. "Current subscribers report their sales successes along with ways we can provide more value."

If you are interested in subscribing to the National Honey Board International Trade Lead Service or would like more information, contact the National Honey Board office.

WHERE'S THE HONEY?

Why slave over a hot stove when you can dash into a cool supermarket? A joint study by *Prevention* magazine and the Food Marketing Institute finds 73 percent of consumers have bought such prepared foods as deli salads and precooked entrees from supermarkets. People who are employed are more likely than homebodies to avail themselves of this option, but the gap isn't as large as you might guess: 80 percent of part-time workers, 76 percent of full-time workers and 68 percent of those not in the paid workforce say they buy prepared foods. For many consumers, precooked supermarket fare is an alternative to takeout from fast-food restaurants, and 69 percent of the survey's respondents view prepared foods as a healthier choice.

From Adweek

AUSSIE STATE MOVES TO PROTECT BEES

The Western Australia government announced plans to increase security to prevent unwanted exotic bees entering the state through its nine ports.

The move is designed to protect the state's status as being free of serious bee diseases including European Foul Brood and mites - and the pollination value of local bees estimated at A$90 million a year.

"Agriculture Western Australia officers are currently being trained to carry out surveillance and monitoring," said Primary Industries Minister Monty House. "The increased surveillance will also involve the beekeeping industry in setting up hives as monitoring sites in and around ports."

House said the most likely entry point for exotic bees as at the state's ports where they could arrive in ships or be in cargo from overseas. The main threat is from vessels arriving from Asia and South Africa.

Alan Harman

Display Advertisers

Small Hive Beetle Update

Malcolm T. Sanford

The prevailing concern at this year's American Beekeeping Federation Convention in Nashville, TN was the scope of the small hive beetle problem and possible solutions. Given that this insect was first detected only six months ago, there are bound to be differences of opinion by those closest to the situation. Dr. Frank Eischen of the Bee Research Unit, Weslaco, Texas Beneficial Insects Laboratory moderated a panel on this subject. He said that at first he was skeptical about the beetle, but seeing the effects firsthand have convinced him otherwise.

Dr. H. Shimanuki, recently and temporarily reassigned as technical liaison to the industry in Beltsville, MD began the panel by saying that like Mark Twain, who said reports of his death were premature, reports that he, Dr. Shimanuki, had said the beetle was not a problem in United States were also too rash. On a recent visit to South Africa Dr. Shimanuki said that practically every bee colony he saw had adult beetles. In spite of his, however, the beekeepers reported that these insects were not causing great damage. Of more consequence was the invasion of the African bee's (*Apis mellifera* scutellata) range by the Cape bee (*Apis mellifera* capensis). One beekeeper Dr. Shimanuki visited indicated a 30 percent loss each year from this phenomenon. Relatively speaking, therefore, the few colonies lost from small hive beetle are not as serious.

According to Dr. Shimanuki, colonies that are lost in South Africa from any cause are easily replaced by those trapped in bait hives. There is no organized queen or package bee enterprise in that country. Conditions in South Africa, therefore, are not easily reconciled with those present in the United States. *Varroa*, tracheal mites and wax moth, for example, are problems that have yet to be fully felt there. Dr. Shimanuki suggested that beekeepers should not panic, but keep a close eye on the beetle and consider carefully a variety of practices that might mitigate the extent of its depredations, particularly sanitation around the honey house.

James Baxter of the Weslaco lab, who has been in the forefront of small hive beetle research in Florida began his presentation by awarding a plaque to his coworker, Mrs. Charlotte Randall, of Randall's Wax for her diligent efforts in helping complete the research that led to a real bright spot reported at the convention, approval of a Section 18 label for coumaphos-based treatment inside the hive. Mr. Baxter gave a history of the beetle and its detection in Florida, South Carolina and Georgia. It has also been reported in North Carolina. So far, the biology of the pest is not totally known, he said. It is now been shown, however, that beetles will preferentially hide under cardboard inserts on the bottom board and small units seem to attract more beetles than larger colonies. However, the beetles may also move quickly to other reaches of the colony, making predicting their presence more problematic. Limiting factors involved in beetle population buildup are thought to be soil type and condition, moisture, and temperature. He concluded by showing the results of experiments using eight insecticides (published in *Bee Culture*, Nov '98, Jan '99). The best control was by the material that has just been approved, coumaphos, as well as permethrin, soon to be approved for use outside the colony as a soil treatment.

Mr. David Westervelt of the Florida Department of Agriculture and Consumer Services discussed his observations in the field as part of the team doing experiments on the hive beetle (See January 1999 *Bee Culture*). He said the beetle hides with great alacrity within the colony based on temperature and other factors, using it almost like a "hotel." He reiterated that smaller units seem to attract more beetles and reported that nucs are especially vulnerable. He has also observed that beetles appear to lay eggs on cues which appear to correlate with hive manipulation. Moving colonies, for example, or annoying them in other ways, accelerates egg-laying. Those disturbed in an observation hive were seen immediately to begin mating and laying eggs; this small colony quickly succumbed.

Dr. Eischen finished the panel's presentations with a description of an experiment to determine alternate hosts for the beetle. A wide variety of fruits were shown to be not very attractive to the small hive beetle with the exception of cantaloupes and pineapples. Cutting fruits made them more attractive, although in one case beetles bored through the rind of an uncut cantaloupe and by the time this was noticed, the fruit contained hundreds of adults. These results appear to indicate that fruit will attract beetles, but they are a resource of last resort.

The panel concluded with a video presentation showing depredations of the beetle in Florida where infestation is quite high. This showed the worst conditions beekeepers might see in colonies. The only conclusion this reporter could determine was that the jury on how to generalize about this problem remains decidedly out. With the approval of coumaphos, a chemical control for the beetle, however, beekeepers will have another weapon at their disposal when and if they spot problems in their operations.