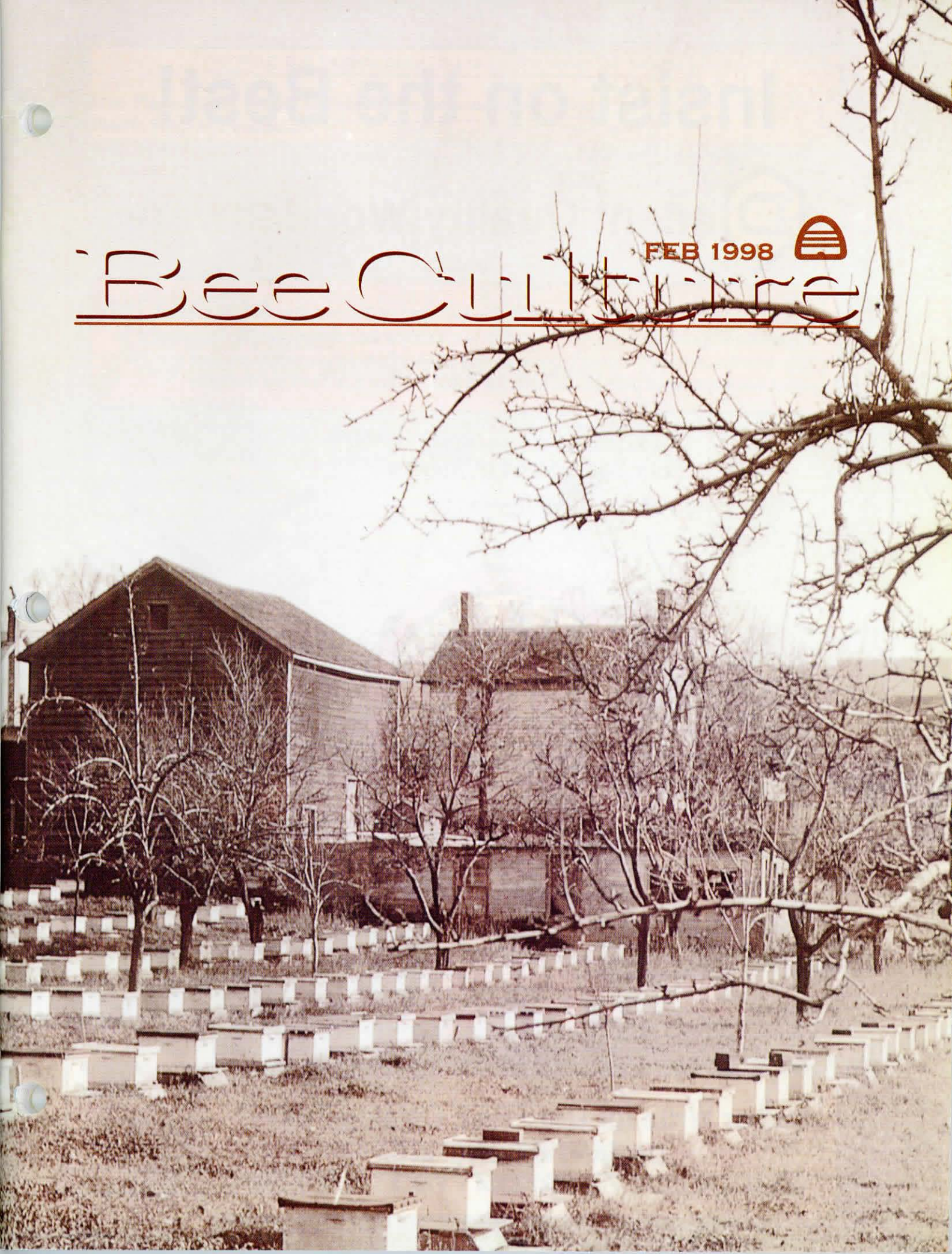


FEB 1998



Bee Culture



Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

FEBRUARY 1998 VOLUME 126 NUMBER 2

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Beeyards. Setting up a yard like this in town - almost any town, anywhere - is unheard of anymore. Legal problems, zoning, liability questions and plain common sense preclude an urban, or even suburban location. So where do you go, and how do you protect yourself, and your bees? Dick Bonney and Jim Tew tackle these sticky questions this month, with some common sense answers.

This photo is from our archives, with no date or location noted on the back. It is, however, from a past we shall never see again.

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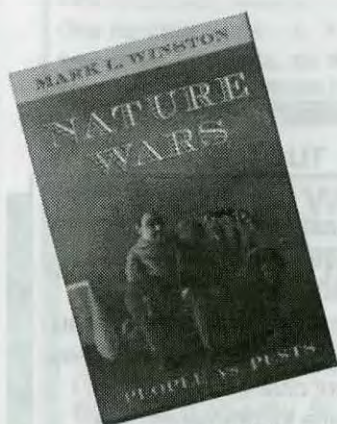
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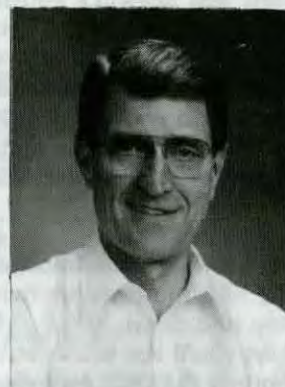
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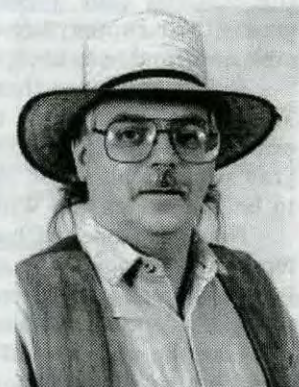
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JOHN ROOT
Publisher



KIM FLOTTUM
Editor



INNER COVER

Hillsides in Winter in all but the most tropic parts provide a display not often seen. In Spring these hills dress in a thousand shades of green, then go ripe from light white jade to verdant hues and tones. Autumn's chill brings reds and golds and yellows and the tourist gathering, money raising, season ending show so popular, and so passé.

But hillsides in Winter, like a Wisconsin roll, a north Ohio swell or an Indiana rise all have a show. But mountainsides, like Western sky-fillers or Eastern near-mountains are more dramatic, more memorable but mostly overlooked in Wintertime – so much almost all the same.

So tomorrow go and look. Go and see if you don't see on a hillside or swell on a mountain or a rise the yellows, golds, the browns and whites, the grays and blacks that each tree displays beneath its unleafed frock.

Look at these trees, not the forest they're in and see the simple elegance of some and fuzzy, furry, too-busy tops of others. See the dark brown trunks fade to tan, or white or gray the higher up they go. And note each rare grand specimen. Spectacular. A great grand father all alone, upholding mighty arms with twisted, gnarled branches wearing weathered leathered vests. Alone, commanding its great space, to keep at bay another year the smaller, younger challengers.

Those trees on the edges lean for the light to avoid the shaded middle, while those in the center reach tall and fast and far. Straight and narrow not touching a neighbor seeking light to grow.

Winter snow, if there's snow where you are highlights the dead and fallen. Often they fall parallel and pointed, like a great hand waved by and swept them down as it passed. Sometimes though they're random, this way and that all over each other. Like great pick-up-sticks with no order and no plan. The still-standing dead are torn, and tattered, and a hundred holes show through made by the forest's hungry and homeless the many, and the few. The broken branches on these dead are still gold or white or tan, but the sawdusty decay piled high below foretells their fate and they too will finally fall. They just don't know they can.

Some of these have already let go to be caught in the arms of the living. But these widow-makers for awhile, in a season or so will be released and give up their timbered ghost to complete the cycle of dust-to-dust below.

Sometimes you'll see some stubborn trees that won't give up the Summer time, holding tight last season's youth. No longer green, their copper, brown and golden leaves are wrinkled, withered and unable to accept time's march, at least until next Spring.

Before you leave these single trees, see others that live there. The bright red bramble tangles spread out and snarl the nearest anything at all. And on the edges the rusty red fuzz atop the smooth gray sumac stalks feed birds, fuel smoker fires and add a color not to be missed in this Winter's blend.

Now step back. Change your focus from these trees to the forest and let your eyes relax. It's hard I know but see and almost feel the colors sweep across the hill, the textures right behind as you gaze from side to side to top and down.

Like the very best of sofa art you'll see brush strokes up and down but with neither top or bottom that still connect but aren't a part of any individual tree, and sudden spurts of taller trees rise high, spread out and catch your eye . . . but let them go and focus

on the forest, not the trees.

Most hillsides have some evergreens mixed in among the leafless limbs. Some hills are only evergreen, but these are stories for other days.

But on our hill these needled stands form lines of green across the scene in shaggy patterns that hold in clusters green within a greener green. Lines of these will sway and run across this hillside gaze, a slopey smile flows down and down, where in a jumble and a heap, they're no more to be seen.

When well mixed in within their unleafed kin this needled clan will shed their bottom gowns and stand naked in the Winter, from their great green shoulders down.

Now focus on the forest and see what *we* have done. With certain regularity great slashes rise and fall for power lines that part these hills to feed factories and malls. They split apart this sylvan slope and with irony and gall, the poles that shoulder this electric load were trees that we did fall.

Hillsides in Winter, like poets you have read, are sometimes beauty, sometimes strange, and sometimes even dead.

Kim Flottum

Hillsides . . .

Oops . . .

Last month we did a story on Lester Hines, a beekeeper in the desert southwest who successfully manages African honey bees. No, Lenard Hines has not changed his name. I just take incomplete notes. Sorry Lenard.

Reader Assistance

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Vitex

Your inquiry from Frank Chamberlin, Asheboro, NC about Vitex and its use as a honey plant. I have read about its ability to make a ton of honey per acre. I have never had enough acreage to test this. I have two city lots. I ordered about 12 or 15 plants from Pellet Gardens in 1968 and set out about 100 foot row. Today these plants are 20 feet high, huge bushes that screen the south side of my property. They leaf out usually by April 1 and start blooming shortly thereafter. Bees work these plants all day long. The blooms fill the air with a delightful smell. I have had a few bee colonies in the shady side. I have caught many swarms on the branches of my Vitex. I no longer keep bees but enjoy reading *Bee Culture* magazine. I've had bees since 1949 until a few years ago and my age won't let me keep working them. If you will please forward this information to Mr. Chamberlin, perhaps we could exchange other information he might require about Vitex. I never met a fellow beekeeper I didn't enjoy hearing from or talking too.

Harold Hinkle
Rt. 1, Box 25C
Cross Plains, TX 76443

Newcomer

As a newcomer I would like to put my other hobby of woodworking to use by making hives. I'd like to make the traditional finger box joints kind. Are there construction notes one can find?

Please feel free to pass my email address along.

John Becker
200 N. 4th St.
Louisiana, MO 63353
email: molou@big-river.net

Vintage Issues

Is there a market for old issues of *ABJ*? I have Jan-Dec,

MAILBOX

1930 and Jan-Dec, 1931. Also Jan-Dec, 1930; Jan-Dec, 1931; Jan-Dec, 1932; and Jan-Dec, 1933 of *Gleanings In Bee Culture*; also other pamphlets and catalogs from the 1932-33 era from Lewis and Dadants and Root Bee Supplies. All in excellent condition.

William A. Mann
School of Environmental Design
609 Caldwell Hall, University of GA
Athens, GA 30602

Honey Connoisseurs

When we first became beekeepers I thought honey was honey. I had of course heard and even sampled clover honey, alfalfa honey or, what in England is considered the ultimate, heather honey, but my tastebuds were not yet sophisticated enough to detect the difference one from another. For the first few years of beekeeping, I merely marveled at the liquid gold we extracted from our honeycombs and would remark almost daily, usually at breakfast, how delicious "our" honey was. At that point we were eating up or giving away all of our year's yield and so had no way to compare one harvest to the next, and since our bees forage on wildflowers, fruit blossoms, bushes or whatever is in season at the time, our honey has no distinguishable flavor, or so I thought. I noticed that some years our crop was darker than at others, some years it seemed thicker, others runnier, sometimes clear, sometimes cloudy, but it wasn't until I found some jars from previous years, hidden away at the back of a closet and thereby had a comparative tasting that I realized that all honey is not alike. Now I wait in anticipation to discover the flavor of our annual crop. Last year, our honey had a slightly smoky taste I attributed to the Inverness fire. This year it seems somehow smoother and less pungent, a taste which really appeals to me. My husband however prefers the darker, thicker

honey with a heavier taste, and we have developed the habit now of sporting two pots of honey on our breakfast table, one for him and one for me, double the trouble but double the enjoyment. I understand that judges of honey are quite opinionated and I wonder how they ever make up their minds and decide on the winners, since all pure, natural honey has a distinctive flavor, be it poison oak or heather. I'm relieved I don't have the job of judging since, like people, I have discovered that tastes and honey flavors all differ and whoever assumes the roles of expert must be arrogant indeed.

Margaret Moore
Inverness, CA

Endangered Species

I've become concerned about the future of the honey bee and the public's attitude toward them.

On several occasions, I've been contacted by businesses and individuals regarding honey bees in walls or out buildings. Rather than pay a *small fee* for their removal, they either kill them or plug up the hole!

Perhaps people would understand the importance of preserving the honey bee if the bees were put on the endangered species list.

Recently on the Discovery Channel, a group of Ph.D's from the University of California stated that about 90% of the feral (wild) swarms have died. A local Georgia Forest Ranger estimates the total closer to 98%.

If bees are being lost at this alarming rate, shouldn't measures be taken to protect them?

The general public doesn't seem to have any knowledge as to the importance of the honey bee i.e. pollination, food chain, etc. Maybe a wake-up call is needed.

How about a poll for putting honey bees on the endangered list?

I'm in the process of contact-

Continued on Next Page

MAILBOX

ing State and Federal officials as well as the GA Dept. of Ag. regarding this matter. Any input from your readers would be appreciated.

Bobby Robertson
522 Forest Heights Dr.
Calhoun, GA 30701

Future Problems

I have two items I would like to broach with the beekeeping industry. Both, I believe, are cause for real alarm and require action on our part. I am sure others have seen these, and maybe are even working on them at present. I just want to make sure.

I was recently cruising the WEB and found a APIS - Apicultural Information and Issues monthly newsletter, ISSN 0089-3764, published by the Florida Cooperative Extension Service, Department of Entomology and Nematology, Institute of Food and Agricultural Sciences (IFAS) at the University of Florida. I believe it is written by Malcom T. Sanford. You can find APIS at the following WEB site: <http://www.ifas.ufl.edu/~mts/apishtm/apis.htm>

In reading the August 1996 Newsletter I found the following:

"It [Argentina] is the only country to my knowledge where *Bacillus larvae* [American foulbrood] (known there as *Paenibacillus larvae*) has become resistant to oxytetracycline [Terramycin®] (see June 1990 APIS)."

Following the June 1990 link it reads:

"An interesting situation has arisen in Argentina, presumably due to importation of a large quantity of queens from the U.S. American foulbrood, previously unknown in that country, is now epidemic. In addition, for some reason it doesn't appear to respond to treatment from Terramycin® at the same dosages used in this country. Levels of up to 1200 mg active material must be used as opposed to the 200 mg recommended in the U.S. This has proven disastrous for beekeeping in certain regions of the country."

Would this not/is this not

disastrous for beekeeping in this country/the world?

The second item is just as bad. It is found at the same WEB site. This is what the June 1996 issue of APIS had to say:

"Ever since beekeepers began using pesticides inside living bee colonies (see December 1987 APIS), there have been concerns voiced about colony contamination. Most had to do with honey; these are reduced considerably now with appropriate use of Apistan®. Few, however, considered the possible effect of long-term widespread use of the contact pesticide fluvalinate on the beeswax supply."

"No longer is this the case. Writing in the same issue of *BEE BIZ*, Clive de Bruyn reported that high residue levels of fluvalinate have been found in beeswax. Because of the nature of the molecule, he concluded, it bonds with the wax, making it almost unremovable. The *Australian Bee Journal* (quoted from June 1996 *Bee Culture*, p. 376) says virtually every kilogram of European wax is contaminated, most likely because of recycling fluvalinate-impregnated wax for foundation."

"European beekeepers, therefore, are examining their beeswax more closely than in the past, and not using heavily contaminated product for foundation. Dr. Peter Rosenkranz, University of Hohenheim reported . . . that residues from two to 20 milligrams of fluvalinate per kilogram of beeswax have been found. He says these levels might be enough to cause pesticide resistance to develop in *Varroa*. Mr. de Bruyn says that so much resistance can already be seen in certain districts of Italy, France and Germany that beekeepers are being advised to abandon all pyrethroids (chemical relatives of fluvalinate) in favor of other chemicals."

"If levels of fluvalinate get too high, might there not be concern that the honey bees themselves will be poisoned by the chemical designed to rid them of *Varroa*? However, it concludes that a return to fluvalinate-free wax, would take an estimated 50 years, provided there was no chemical usage for that time period."

Recently, in the news, we have

been hearing of "Super Strains" of diseases that have developed in people that no longer respond to standard antibiotic drugs or treatments. It seems the same is true for bees.

I realize that this drug (Terramycin®) and pesticide (Apistan®) are all we have at present. But are we not putting or children/grandchildren, if not ourselves, out of business with their continued sole use? Are we not producing strains of diseases and pests that we might not be able to overcome?

About five or six years ago my wife and I were laughing over a label that we saw on a honey jar in a store proclaiming "Organic honey." There are a number of people who are hypersensitive to antibiotics/pesticides and buy only organic. I remember saying what a way to jack the price of honey up, claiming it is Organic. Well if we ever have to use 1200 mg. Of Terramycin® and the levels of Apistan® in the foundation keeps rising it won't be funny any more.

Bill McLaughlin
Deer Trail, CO

NHB Referendum

Editor's Comment: We have received several letters similar to the one below. While different in detail, the general tone, and sentiment is the same. We started the discussion on the National Honey Board Referendum several months ago with the intent of generating not only interest, but discussion on this very important topic.

What has come out over these months has been informative and enlightening, and questions have been posed that still need answers. We will continue to examine, fairly and without prejudice this question.

In regards to the National Honey Board and the ABF's proposed changes to the National Honey Board:

Although honey packers and producers share a common interest in promoting the wholesomeness, tastiness, and utility of honey, our interests plainly diverge on some basic economic issues. The following are the salient differences:

MAILBOX

1. U.S. producers benefit from high producer prices.
2. U.S. packers benefit from low producer prices and high retail prices.
3. Producer packers benefit more from high retail prices than they suffer from low producer prices, and they actually benefit from low producer prices if they pack outside product.

The National Honey Board was established in 1985. Since then, producers have paid approximately 2% of their gross income to promote generic honey. Since then, retail price (and packer price) has risen steadily. Benefit to packer. Since then, the consumption of honey (and packer volume) has risen steadily. Benefit to packer.

On the other hand, the U.S. producer price held steady at about \$.50 per pound for the first several years of the program, and only increased when world production fell short three seasons ago. At the moment it appears that U.S. producer prices are headed back down to 1984 levels, does it not? To my fellow producers, I have to say, "Admit it fellows, we've been fleeced." To smaller packers and producer packers, I recommend they take care who they trust and support. Watch your back.

Have you ever stopped to ask yourself why packers have a vote on how to spend promotional money that they don't contribute to?, and why so many "producer" representatives on the NHB are actually producer-packers? Here in the Northeast, we've had nothing but producer-packers as producer reps since the program started. Don't get me wrong. I value packer input. They have an interest and expertise that we producers, by and large, do not possess. Despite this I know that producers would benefit more if when it came time to make decisions on how the money is spent, producers alone made the call.

As to the ABF's proposed changes to the National honey Board, I'd like to address these

one at a time. They have two proposals of the "Mom and Apple Pie" variety. They are proposing a change so a small percentage of the NHB budget would be directed to production research. We need research but it's too bad that this proposal is tied into the rest, which amounts to an indigestible hairball. I offer a suggestion as to how research money can be raised and appropriately directed; raise it within the industry. I am a member of a small regional beekeeping organization made up primarily of hobbyists, with a few commercial beekeepers involved. Over the last few years this group has managed to accumulate \$13,000 in a research account and will distribute small grants from the interest and earnings. I know that a proposal has been put forward and the American Honey Producers Association may set up a research fund. A substantial industry fund would give the industry leverage when lobbying the government for more funding and would help to direct the research toward the producers' needs.

Another of the ABF proposals is to have the packers kick in a penny per pound. What a novel idea, to have the major beneficiaries contribute! But I suspect that the packers will pass this expense onto the consumer or more likely, the producer. What's more, of this extra penny, which the producer will likely pay, the packers can use one half of it to promote their own personal businesses!

In addition to this dubious benefit, the proposal puts two more packers on the board, which they already have control of.

Lastly, the proposal includes language giving the NHB authority to institute a quality assurance program, inspecting honey for purity. Now, I am sincerely against any kind of adulteration or contamination of honey. However, I've talked to the chairman of the National Honey Board's committee on "quality assurance," I've asked Dave Hackenberg and Bill Gamber (all of whom are proponents of the ABF's proposed changes) and none of them can tell me what will determine quality or adulteration, who or what they will look at, or how this program will be con-

trolled. There is nothing specific in the bill in this regard. Seeing how packers profit from low bulk prices, are they the people most appropriately given authority to assure clean honey? I don't think so. With no direction and carte blanche authority, couldn't this be used as a club against individual packers or producers, or to limit competition by placing burdens on small packers, or conversely, by giving an advantage to other packers in the form of a "seal of Approval"?

Did you know NHB votes are weighted by how many pounds are produced or handled? Did you know that 100% of the producers could vote no on a NHB referendum, and it could still pass? Not very democratic. I thought they only had a House of Lords in England.

If you don't like the situation and want to voice your opinion, write Robert Smith, Chairman of the Committee on Agr., 1301 Longworth HOB, Wash., DC 20515-6001; Thad Cochran, Chairman of the Agriculture and Rural Development Committee, SD-136, Wash., DC 20510; Secretary Glickman of the Dept. of Agriculture, 14th and Independence Ave., SW, Wash., DC 20250 and your congressman. Go to your state beekeeping associations meetings. Find good producers and promote them to your regions' nominating committee through your state association.

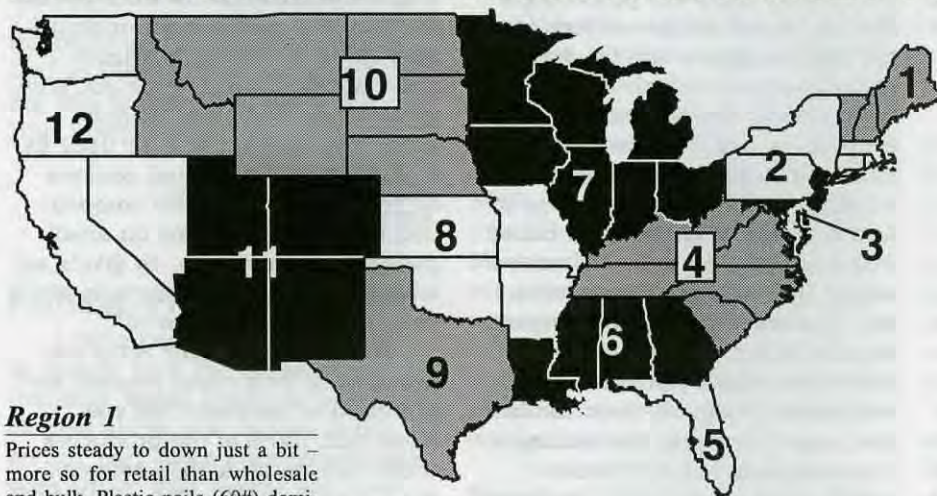
I know a lot of producer-packers are good people. I have respect for many and do business with several. But do Republicans nominate Democrats to carry their banner? Do packers pick producers to represent them? Let's have producers representing producers.

My intention when I wrote this was to respond to Dave Hackenberg's letter (Dec. 1997). On that I'll just say a lot of us do try to buy and promote U.S. products Dave. I'd like my NHB money to do the same. It couldn't do any worse for the producers than the present promotional set up. And I think it could do a lot better.

Looks to me like ABF stands for American Bottlers Federation on this one.

Bob Brachmann
Little Valley, NY

FEBRUARY - REGIONAL HONEY PRICE REPORT



Region 1

Prices steady to down just a bit - more so for retail than wholesale and bulk. Plastic pails (60#) dominate reporters' sales here, but retail glass the staple. Plastic retail also popular, as is comb honey, to some degree.

Region 2

Prices increasing a bit, pretty much across the board, but only a small amount. Bulk and wholesale more than retail, but retail up a bit, also. Glass and plastic containers dominate sales as percent of crops sold. Glass more popular than plastic, but bulk 60# pails close behind.

Region 3

Prices here determined primarily by retail sales, and as such tend to remain somewhat higher than other regions. Also, glass and plastic dominate, but there are some commercial outfits who keep everybody honest.

Region 4

Prices fairly steady at both retail and wholesale levels. Glass for retail is the predominant container, but plastic retail, and 60# plastic wholesale aren't far behind. Interestingly, plastic jugs are prominent here as a bulk retail.

Region 5

Wholesale and bulk prices up, retail and other prices only steady to down. As a major honey producing region, bulk and barrel sales dominate the market, and tend to set the price. However, specialty crops fill niches barrels can't control. Retail sales are primarily in glass.

Region 6

Prices steady overall, but mixed at both retail, wholesale and bulk. The most amount of honey is moved in drums, but the greatest number of containers are glass, followed very closely by plastic retail. Plastic pails common too, sold at wholesale bulk.

Region 7

Wholesale prices steady to up a bit, retail steady to down just a bit. Glass and plastic the most common containers used, with glass edging out plastic by quite a bit. Plastic pails, and plastic jugs for bulk sales and yard rental common. Barrels certainly handle the most honey, but not the most used.

Region 8

Wholesale prices steady across the board, but retail increasing somewhat, although only slightly and slowly. Glass dominates the retail trade but some plastic around. Certainly lots of bulk produced here.

Region 9

Prices steady, but still low for retail and wholesale. Bulk not moving well, retail O.K. Glass and plastic about even at retail, but some won't touch plastic.

Region 10

Prices down for both wholesale and retail, but not much. Sales slow, especially for bulk, but retail off a bit, too. Drums certainly popular here, but so is plastic. Glass a close second.

Region 11

Prices up more than down, but wholesale slow and lower than last month, if only a little. Glass way out front here plastic a distant second for retail.

Region 12

Prices pretty much down for all commodities. Sales only steady. Containers popular by area, some prefer glass, others plastic, and specialty containers of each popular.

	Reporting Regions												Summary		History		
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.	
Extracted honey sold bulk to Packers or Processors																	
Wholesale Bulk																	
60# Light	67.75	77.83	69.82	71.00	75.00	68.50	67.10	78.00	54.00	59.33	79.00	59.40	45.00-95.00	69.45	67.55	68.23	
60# Amber	64.74	69.46	68.74	66.40	54.00	62.00	64.00	73.33	52.00	63.00	68.00	62.20	45.00-95.00	66.21	64.24	65.61	
55 gal. Light	0.88	0.87	0.97	0.88	0.80	0.89	0.83	0.81	0.81	0.78	0.81	0.82	0.73-1.30	0.89	0.87	0.97	
55 gal. Amber	0.80	0.80	0.90	0.83	0.70	0.86	0.81	0.75	0.79	0.73	0.80	0.78	0.60-1.25	0.84	0.81	0.91	
Wholesale - Case Lots																	
1/2# 24's	28.46	26.39	29.07	33.30	29.07	29.90	28.51	29.07	30.00	29.07	30.25	26.54	20.40-37.20	29.62	29.11	30.22	
1# 24's	42.78	41.31	47.32	44.27	44.00	42.50	42.32	39.36	49.00	41.10	50.53	44.44	32.50-66.00	43.45	43.09	41.45	
2# 12's	37.66	36.35	40.63	42.85	37.00	38.00	37.96	39.20	42.00	36.90	41.30	36.49	29.40-54.00	38.48	37.69	38.64	
12 oz. Plas. 24's	34.92	35.01	35.23	37.28	30.50	27.00	35.19	33.70	42.00	35.00	46.13	31.24	16.00-54.00	35.68	35.44	35.36	
5# 6's	40.11	42.00	44.16	45.80	37.38	41.04	36.93	39.50	45.00	37.50	42.28	36.61	24.00-67.50	40.98	41.22	38.31	
Retail Honey Prices																	
1/2#	1.78	1.50	2.83	2.17	1.29	1.82	1.70	1.82	1.95	1.83	2.38	1.76	1.19-3.20	1.81	1.76	1.93	
12 oz. Plastic	2.18	2.20	2.35	2.35	2.08	2.23	1.98	2.26	2.95	2.07	2.70	2.11	1.59-3.25	2.21	2.22	2.14	
1 lb. Glass	2.66	2.58	2.99	2.79	2.08	2.77	2.45	2.75	2.50	2.50	3.48	2.81	1.99-4.29	2.69	2.67	2.64	
2 lb. Glass	4.32	4.46	4.27	5.18	3.46	4.68	4.10	4.32	4.50	4.58	5.05	4.39	2.50-5.89	4.43	4.42	4.35	
3 lb. Glass	6.08	6.62	6.56	7.19	5.40	5.95	5.59	5.81	6.25	5.49	6.95	5.88	4.79-8.69	6.21	6.08	5.78	
4 lb. Glass	7.72	6.85	8.80	9.29	8.80	6.80	8.35	8.29	6.95	8.70	8.91	8.69	6.60-11.69	8.10	7.74	7.55	
5 lb. Glass	8.99	9.34	10.21	10.74	6.88	7.50	8.54	9.15	9.95	7.90	9.96	9.01	6.50-14.99	9.14	9.06	9.21	
1# Cream	3.18	3.06	3.72	3.80	3.72	3.03	2.59	3.18	4.75	2.52	3.74	3.26	2.19-5.75	3.22	3.13	3.30	
1# Comb	3.94	4.24	4.01	3.99	4.01	4.00	3.54	4.15	4.20	4.01	4.88	4.00	1.95-6.00	4.08	4.19	4.16	
Round Plastic	3.59	3.14	4.06	4.00	4.06	4.00	2.94	3.14	3.00	4.06	4.75	4.19	2.00-6.50	3.69	3.86	3.76	
Wax (Light)	2.66	3.28	2.00	1.62	1.55	3.19	2.16	2.34	3.25	1.75	3.00	2.79	1.25-5.50	2.69	3.04	3.06	
Wax (Dark)	2.36	3.10	2.99	1.43	1.15	2.83	1.90	1.98	2.25	1.60	2.38	2.36	1.10-5.50	2.37	2.62	2.66	
Poll. Fee/Col.	35.04	36.67	25.00	40.00	25.00	38.50	33.00	38.25	25.00	36.98	50.00	35.50	15.00-60.00	35.93	34.03	37.14	

NEW BOOKS

Internet Guide for Farmers, Extension Agents [Book excerpts on UC SAREP's Web site: <http://www.sarep.ucdavis.edu>]. University of California DANR Communication Services, 6701 San Pablo Ave., Oakland, CA 94608-1239 for \$12 (add \$3 handling + \$.99 Calif. tax). Checks payable to UC Regents. VISA, MasterCard or purchase orders: (800) 994-8849, (510) 642-2431; FAX (510) 643-5470.

Farmers and beekeepers have joined business people and researchers worldwide in using the Internet, but are they finding the information they need for their operations? The University of California Sustainable Agriculture Research and Education Program (SAREP) has a new book to help them.

How to Find Agricultural Information on the Internet shows farmers, ranchers, extension agents, consultants, gardeners and others the basics of choosing an Internet provider, figuring costs, using electronic mail, getting answers from e-mail discussion groups, searching the World Wide Web for practical information, finding graphics on the Web, and copying information from the

Net for their own use.

"Farmers are going beyond using computers just for bookkeeping," says Jill Shore Auburn, SAREP associate director and editor of the book by Mark Campidonica. "But many of them are unsure of the methods used to get good information off the Internet, and need basic 'how-to-do-it' details. Our book does just that."

Auburn says the new book is aimed at both beginning and intermediate Internet users, and walks readers through real-life examples of farmers looking for and copying information, posting questions to international user groups, and shows a university scientist answering client questions. Although it is aimed at the agricultural community, the book offers plenty of good beginning Internet information and is useful for anyone who wants to "log on."

A recent USDA survey shows that more than two million computers are in use on farms of all sizes in the U.S., with 13 percent having access to the Internet. In CA, 23 percent of the state's farmers have access to the Internet, almost twice the national average (highest: 31 percent, NJ; lowest: 4 percent, Louisiana and MS).

MARK L. WINSTON

NATURE WARS

PEOPLE VS. PESTS

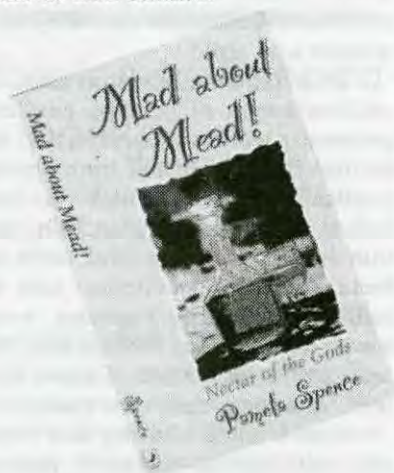
Nature Wars, by Mark Winston, Hardcover, 210 pps., \$24.95. Published by Harvard University Press, 79 Garden Street, Cambridge, MA 02138, ph. (617) 495-4714, FAX (617) 496-2550.

The use of chemical pesticides in North America can and should be reduced by at least 50 percent, says Mark Winston, *Bee Culture* columnist and Simon Fraser University biologist.

Mark is the author of this new book, a persuasive indictment of our ongoing – and futile – chemical battle to rid ourselves of the animals and plants that we consider pests.

The extent of the chemical warfare against pests is "staggering," says Winston. In 1993, for example,

Mad About Mead: Nectar of the Gods ISBN 1-56718-683-1, 208 pp., illus., is published by Llewellyn Publications. Available from the A.I. Root Co. for \$13.95 in early March. Look for ads in *Bee Culture*.



Llewellyn Publications is proud to announce the release of *Mad About Mead: Nectar of the Gods* by American Mead Association founder Pamela Spence. Mad About Mead begins with an exciting tour of meadmaking down through the ages and around the world. From infant blessings to wedding ceremonies to funeral rites, mead and honey have been mankind's consistent companions through life. Pamela Spence has collected examples of the use of mead and honey in life rituals from around the globe.

Pamela puts her years of meadmaking experience on paper in a thorough yet simple explanation of how to make mead at home. She discusses the equipment and ingredients needed to make mead and gives the basic building blocks for a standard mead recipe. Guidelines for making melomels (fruit meads), metheglins (spiced meads), and rhodamels (flower meads) are included, as well as recipes to take you through the year. Howling Jack: Honey Pumpkin Mead can actually be made in the pumpkin, while Ravishing in Red: Raspberry Melomel will bring Summer to mind no matter when you drink it.

Continued on Next Page

5.6 billion pounds of pesticides were used worldwide. In the United States alone, that translates to four pounds of pesticides for every man, woman and child.

At what cost? Winston cites one million cases of human pesticide poisoning worldwide every year. Add to that the hidden toll from chronic pesticide exposure, which has been linked to immune dysfunction, various forms of cancer and birth defects. Chemical pesticides also kill millions of nontarget species, wreak havoc with natural food chains, and lead to the evolution of more virulent, chemical-resistant pests.

And who is winning this "modern war against nature"? Not us, says Winston, "In spite of a vast increase in the amount of pesticide used over the last 30-40 years, the amount of crop lost to pests has increased from 31 to 37 percent."

Nature's Wars uses case studies - in the United States and Canada - to illustrate the complex political, economic, biological and social factors behind pest control decisions. Winston calls for a more enlightened approach to pests, one based on management rather than eradication. He proposes a new ethic that favors biologically based alternatives, with chemical pesticides used only as a last resort.

More than anything, concludes Winston, it's our intolerant attitude toward pests - and nature in general - that must change. Does a single cockroach scuttling across your kitchen floor really demand that your house be bathed in insecticide? Do those dandelions on your lawn really have to be doused with herbicide? Does the blemish on that orange make it any less edible?

"I'd like to jolt people into thinking twice the next time they pick up a spray can or go to the grocery store," says Winston. "If the book achieves even that much, I'll consider it successful."

Winston's book is an evening's read, and well worth the time. It shows a different side of this *Bee Culture* columnist, one I'm sure you'll appreciate.

Kim Flottum

Practical Beekeeping In New Zealand, third edition ISBN 1-86956-206-2, soft cover, illustrated, 145 pages. Contact GP Publications, P.O. Box 12-052, Thorndon, Wellington, New Zealand, Ph. (04) 473 7211, FAX (04) 472 9915 for more information.

The third edition of *Practical Beekeeping in New Zealand* has been comprehensively updated to incorporate the latest information available. Color photographs have been added to the chapter on pests and diseases to aid identification, and new text supplied on further sources of information and laws.

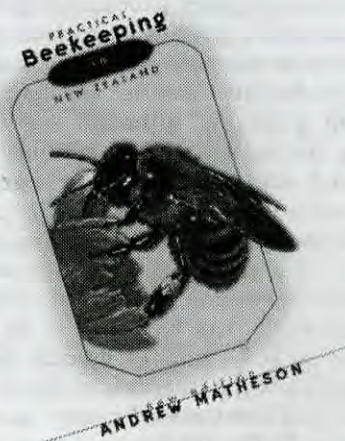
A complete guide to beekeeping in New Zealand, the book provides

professional and amateur beekeepers with details on honey bee management throughout the year, advice on handling hive products, and information about many other beekeeping subjects. Those interested in beekeeping will find this book invaluable when deciding whether to keep bees and what is involved, while horticulturists and farmers will find it of particular interest for crop pollination.

Practical Beekeeping in New Zealand covers the New Zealand beekeeping industry and history; beehive design and construction; starting out with bees; bee colony management; hive products; honey bee pests and diseases; and the use of honey bees for pollination.

Andrew Matheson, an old friend and the author, has worked in many parts of New Zealand both as a polytechnic beekeeping tutor and as an apicultural consultant with the Ministry of Agriculture. From 1991 to 1996 he was director of the International Bee Research Association, the world's leading information service for bee science and beekeeping, based in the United Kingdom. He has had experience as an apicultural consultant and lecturer in many different countries, and has written numerous articles for this and other magazines and other books on bee science and beekeeping.

Kim Flottum



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Roger Morse

Research Review

"Moving bees from the Yucatan to Canada will soon be a reality."



If I understand the general direction of the North American Free Trade Agreement (NAFTA) correctly, it should be possible to truck colonies of bees across the Canadian and Mexican borders within a few years. And, why not? A fear of spreading bee diseases has been the excuse used to close borders in the past, but that thought has no validity today since we all have the same problems.

I can envision a time when bees are trucked into the Yucatan and other parts of Mexico in the Fall, requeened or split three for one, and moved to California for almond pollination in February. They might then be used to pollinate another crop in northern California, Oregon or Washington before being hauled to the Peace River District of northern Alberta for honey production. That should be an exciting bit of migration.

There has just appeared an excellent article on beekeeping in the Yucatan that I review here with the above in mind. I expect there will be resistance to moving colonies across borders, but then there was once a time when some states in this country had the same narrow view. Change is in the works!

Current status of beekeeping in the Yucatan

At the present time, and since the late 1960s, there has been a "proliferation of small-scale, labor-intensive peasant operations" in beekeeping in the Yucatan. Prior to that time honey production was in the hands of larger producers, but

peasant farmers "exerted their legal right of control over the extensive communal forest lands and forced the large producers to remove their apiaries." It is not clear if this type of land control can be sustained or not.

At the time of the last census three years ago there were 726,000 colonies operated by about 18,000 beekeepers, roughly 40 colonies per beekeeper in the Yucatan alone. These bees produced about 70 pounds of honey per colony with little or no management. The Yucatan represents only eight percent of the land area of Mexico, but between 30 and 40 percent of the national honey production is found there.

In November and December there are flowering vines that stimulate colony growth and prepare them for the main honey flow that occurs from December through May. The chief nectar plants are little-known in this country, but belong to the genera *Viguiera* and *Gymnopodium*. They are obviously excellent honey plants.

Africanized honey bees

Africanized bees migrating north from Brazil reached the Yucatan in 1987, and soon thereafter, these bees were found throughout the Yucatan Peninsula. It is thought that the bee population is all Africanized at the present time, but the transition has been slow and has allowed the beekeepers to adapt to the defensiveness and swarming and migratory behavior of these bees. Very few stinging "incidents have been reported and honey production has not decreased notably."

Bee diseases

All of the major honey bee diseases have been found in the Yucatan. However, there has been no study of these until recently, and no one of them appears to be a serious problem. *Varroa* mites were found in Mexico in 1992 and on the Yucatan in 1994. Mite collections made in 1996 "showed that 67.8 percent of colonies were infested but that infestation levels were low." Fewer than 4.5 mites were found per 100 bees. This infestation rate is only slightly higher than that found on Africanized honey bees in Brazil where *Varroa* is also not a problem and fewer than three mites are found per 100 bees. However, it may be too early to make a true statement about the impact of *Varroa* on Africanized honey bees in Mexico.

Tracheal mites have been found in managed and feral colonies on the Yucatan since 1985, but like the warmer parts of the United States, no serious infestations have been found and no one is concerned about them. Nosema has been found but again without any serious consequences. American foulbrood, European foulbrood and chalkbrood are all present but there is also no concern about them.

Both greater and lesser wax moths will ravage weak colonies and are probably the most serious disease problem for Yucatan beekeepers. A flycatcher bird apparently causes small problems in apiaries where queens are being reared. **EC**

References:

Echazarreta, C. M., J. J. G. Quezada-Euan, L. M. Medina, and K. L. Pasteur. *Beekeeping in the Yucatan peninsula: development and current status*. *Bee World* 78: 115-127. 1997.

? DO YOU KNOW ?

Hive Products

Clarence Collison

Mississippi State University

Most individuals keep bees for the delicious honey they produce, others keep bees for the pollination services they provide, or for the production of package bees and queens. In addition to honey, there are other valuable secondary products of the hive that some beekeepers

choose to harvest because of their potential financial value. How familiar are you with the various products of the hive?

Take a few minutes and answer the following questions to find out how well you understand this topic.

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

1. ___ Honeydew is normally less sweet than honey.
2. ___ Bees fed on either honey or sugar syrup can produce beeswax for long periods of time.
3. ___ The various species of honey bees are the only bee species that are capable of secreting wax.
4. ___ Honey in storage darkens with age.
5. ___ Royal jelly, honey and propolis exhibit antibiotic activity against many bacteria.
6. ___ Most deterioration of honey during storage can be prevented by maintaining storage temperatures below 50=83 F.
7. ___ The majority of enzymes found in honey are plant derived.
8. ___ Honey is a vitamin rich food.
9. ___ The ash content of honey is an index of the amount of minerals found within the honey.
10. ___ The sugar content of honeydew is more complex than that found in honey.
11. ___ The sugar composition of honey changes while it is in storage.

(Multiple Choice Question, 1 point)

12. ___ Honey typically contains less than ___ % sucrose.
 - A. 10
 - B. 5
 - C. 20
 - D. 15
 - E. 25
13. Name two insects that produce honeydew. (2 points).

Please match the following chemicals found in honey with the appropriate description or function. (1 point each).

- A. Sucrose
- B. Potassium
- C. Glucose (Dextrose)
- D. Calcium
- E. Maltose
- F. Gluconic Acid

- G. Fructose (Levulose)
- H. Melezitose
- I. Acetic Acid
- J. Sodium
- K. Formic Acid

14. ___ Predominant acid in honey.
15. ___ Most abundant monosaccharide in honey.
16. ___ Sugar commonly found in honeydew but not honey.
17. ___ Sugar largely responsible for the hygroscopicity of honey.
18. ___ Most abundant mineral in honey.

Please match the following descriptions of the various bee products with the appropriate product. (1 point each).

- A. Propolis (Bee Glue)
 - B. Honey
 - C. Beeswax
 - D. Honeydew
 - E. Bee Venom
 - F. Royal Jelly
19. ___ Creamy, milky white substance, strongly acid, highly nitrogenous substance, with a slightly pungent odor and a somewhat bitter taste.
 20. ___ Clear liquid with a sharp, bitter taste, an aromatic odor and an acid reaction.
 21. ___ Complex mixture of lipids (fats) and hydrocarbons.
 22. ___ Mixture of resins, terpenes, volatile oils and numerous other miscellaneous materials.
 23. ___ A highly complex mixture of sugars derived from the exudations of plants.
 24. ___ A highly complex mixture of sugars excreted by hemipterous insects.

ANSWERS ON PAGE 47



Mark Winston

Frankenstein Plants

“Transgenic: Carrying genes transferred from another species or breed.”

Beekeeping is an odd craft, composed of ancient techniques that haven't really changed that much over the years. We tend to be at the brunt end of change rather than on the cutting edge, reacting to events around us rather than initiating them. If the world would just stay the same, we beekeepers would have little trouble making our living, but things don't work that way. Take pesticides: We were perfectly happy moving our bees around to pollinate crops and collect nectar before synthetic pesticides hit agriculture big-time. We then spent the next 30 or 40 years trying to figure out how to make a living on crops that were incessantly sprayed with substances that killed not only pests, but bees as well. Today, we more or less have that one figured out, although bee kills due to pesticides remain a hindrance to beekeeping.

We thought we were out of the woods, but not so. The next generation of pest-killing techniques has hit the marketplace: transgenic plants. The beekeeping community is only beginning to wake up and recognize the problems that these crops present for bee management. Touted as environmentally friendly, effective and harmless to nontarget organisms, transgenic plants are overwhelming agriculture today. And, the beekeeping world is just beginning to discover that these new crops are going to affect us as well.

Transgenic plants are fairly simple to produce these days, using the gene-transferring technology perfected by molecular biologists. It is relatively easy to take a gene from a bacterium or a plant and insert it

into a crop plant, thereby providing protection from a pest. For example, some bacteria have genes that produce insect-killing proteins, and these genes can be put into crop plants so that pest insects feeding on the crop will die. Today, farmers can purchase and plant seed containing genes for these insect-killing proteins for crops as diverse as rape, cotton, potatoes, tomatoes, soybeans and corn. Other crops have been engineered that contain genes resistant to herbicides. For example, canola that is resistant to Round-Up is now available, so that farmers can spray that herbicide indiscriminately while canola is in the field.

On the surface, transgenic plants don't seem to pose many problems for beekeepers, and they may have the considerable advantage that they can reduce the agricultural use of pesticides. In addition, the transgenic seed on the market today is largely for crops of little interest to beekeepers, with the exception of rape, canola and soybeans. However, we are beginning to see an impact of transgenic plants on beekeeping, and it is an issue that we most definitely have not been on top of.

The reality of the transgenic agricultural world that faces beekeepers today first became apparent to me early last September, at the 1997 Apimondia meeting in Antwerp, Belgium. I had just finished writing a book on pests (*Nature Wars: People vs. Pests* - reviewed in this issue), and thought I was right up-to-date on all the issues associated with transgenic plants, but ironically I had missed an issue of considerable importance for beekeepers. There is

a real consumer fear about transgenic plants, and many environmental and food groups have developed a violent, negative, knee-jerk reaction to the concept of eating food products from transgenic plants, in spite of the obvious environmental advantage that transgenic plants might reduce insecticide use.

The transgenic word surfaced at this Apimondia meeting, and I discovered that the European community was considering an outright ban on importations of any food or food product produced from transgenic seed. My Canadian ears burned when I heard this, because much of our honey comes from canola, and most canola today is transgenic. The transgenic fear factor is so strong in Europe that they may not import any honey with even a trace of canola in it, just in case it might come from transgenic plants. Canada and the United States export a considerable amount of honey to Europe, and the perception that transgenic plants produce Frankenstein-like food products is about to disrupt this major export market for honey.

Health problems caused by eating food from transgenic plants are virtually non-existent, but this has not stopped consumer groups from going ballistic on transgenics. It is ironic that there are many more problems caused by pesticides in food than from anything in transgenic plants, but this has not stopped a tidal wave of European public opinion from overwhelming the benefits that this new technology may have for agriculture. Government regulators did learn a lesson from our mistakes with pesticides, and transgenic plants are

Continued on Next Page

“Diminished access to export markets, bee poisonings due to expression of transgenic proteins in nectar, reductions in nectar yield from transgenic crops, and sterilized fields denuded of nectar-producing weeds: These are all potential impacts that transgenic plants could have on beekeeping.”

tested, regulated, and controlled to such an extent that any seed making it to a farmer's field is about as safe as the most organic fruit or vegetable you can imagine. Yet, the perception of potential problems has put an almost impenetrable roadblock in the way of marketing transgenic plant products in Europe.

The environmental impact of transgenic plants also has been a subject of great concern, but again transgenic plants have been rigorously tested and have come up environmentally clean. Nevertheless, one area that has been neglected is the potential impact on bees. For example, do toxins produced by transgenic plants kill bees as well as the pest insects they were designed to kill? Beekeepers, of course, are familiar with this problem when farmers use traditional pesticides, but we are only beginning to catch up with the rest of the agricultural world in testing the effects of transgenic plants on our industry.

Fortunately, most transgenic plants are highly specific in where they express insect-killing proteins, and these products are concentrated in leaf, stem and/or fruit tissue rather than in nectar or pollen. One study on rape nectar, for example, found that the insect-killing proteins expressed in the leaves and stem were undetectable in the nectar, and given the extreme sensitivity of detection methodology today, it is safe to conclude that if it is not detected, it's not there in any quantity that a bee or a person needs to be concerned about. This, of course, was just one study on one crop, and similar analyses need to be done on any honey-producing transgenic crop that makes it into a farmer's field.

We also have been paying scant attention to the nectar-producing


qualities of transgenic crops. It requires considerable energy for a plant to produce the insect-killing or herbicide-resistant proteins that protect transgenic plants, and perhaps these plants are sacrificing nectar production in order to direct the plant's resources toward protein production. This is another area where beekeepers need to lobby hard for the appropriate research to protect the nectar production from crops that is so vital for our industry.

Yet another issue I haven't seen discussed in the beekeeping community is the effect of herbicide spraying on honey yields. If herbicides are sprayed directly on a crop, killing off all the weeds in the fields, will that have a negative impact on honey production? Do we know how much nectar comes from weeds that bloom in the rows between crop plants, and whether this is a significant component of our honey production? If 100 percent of honey yields from a canola field comes from canola, no problem, but if 80 percent comes from canola and another 20 percent comes from weeds, we could be seeing significant reductions in beekeeping income as a result of increased herbicide spraying. I don't know the answer to this one, but it

certainly is an area where some research should be conducted.

Diminished access to export markets, bee poisonings due to expression of transgenic proteins in nectar, reductions in nectar yield from transgenic crops, and sterilized fields denuded of nectar-producing weeds: These are all potential impacts that transgenic plants could have on beekeeping. At this point, the issue we know the most about is export, and this is the issue with the least grounding in reality but the most real impact to date. Perceptions about transgenic products have led to market restrictions in European honey importations, and the clear mood in Europe is for the imposition of even more restrictive regulations concerning honey that may have come from transgenic plants. We are about to be blindsided by this, and possibly other issues associated with transgenic plants, much as our industry was caught somewhat unawares by the pesticide revolution after World War II.

This is an area that requires some technical expertise, and it is a perfect one for the research community to have an important role. Here in Canada, our professional apicultural organization CAPA (Canadian Association of Professional Apiculturists) is beginning to investigate the real and potential problems that transgenic plants might cause our industry, and I'm sure the American organizations are going to do the same. We should remember that perceived problems are just as real to consumers as real problems, and we may need to counter both the perception and the reality of issues relating to transgenic plants.

The agricultural world is once again changing rapidly around us, as is the world of international trade, and beekeepers and researchers need to work together to keep abreast of these changes and react when necessary to protect our industry. Like it or not, genes from one organism are being put into others with ease and increasing frequency, and we all need to pay attention to this important trend in world agricultural practice. 

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

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COTTON CROPS AND HONEY BEES



Ray Nabors

One-half of the insecticide used in the United States every year is applied to cotton. Cotton is in the hibiscus family along with okra and several ornamentals. This family of plants is characterized by large flowers that contain both pollen and nectar. These plants are entomophilous, or insect-loving plants, which indicates that cotton, like other hibiscus plants, is insect- and not wind-pollinated. Our modern cotton plants have been bred to self-pollinate. However, cotton averages a five percent to 10 percent increase in lint per acre if sufficient numbers of honey bees are located within one mile of the crop. Cotton is a woody, perennial shrub, but is grown as an annual. It is native to tropical countries. *Gossypium hirsutum* (upland cotton) accounts for 90 percent of the current world crop. This plant is native to central tropical America. Another eight percent of the world crop is *Gossypium barbadense* (Egyptian, Pima or Sea Island cotton), native to South America. *Gossypium arboreum* is the common cotton native to Asia that is grown and used there, especially on the subcontinent of India.

Cotton occupies vast areas of land in much of the south, and increased demand and prices continues to push the amounts produced.



Since cotton is a perennial shrub, it flowers and fruits over an extended period of time during the growing season. Flowers typically open for only one day, but once flowering begins, each plant will produce a new flower nearly every day. Not only does cotton have floral nectaries, it also has extra-floral nectaries which are attractive to nectar-collecting insects. This provides an additional opportunity for bees. The pollen from cotton is not preferred by the bees but they cross-pollinate the plants during nectar-collecting visits anyway.

The extended flowering period attracts a host of insect pest species, many of which can devastate a cotton crop. The fruit of the plant is called a cotton boll, but the seed pod is edible when green. The sap which forms the cotton lint used for clothes is quite sweet when immature.

The list of insects attacking cotton is extensive and includes: boll weevils, boll worms, whiteflies, pink boll worms, army worms, plant bugs, aphids, thrips and sometimes mites. Any cotton producer will be forced to control at least two or three of these pests each year, and maybe all of them. A cotton producer can lose more than 10 percent of the crop to insect damage, and if allowed to go unchecked, a cotton crop will not usually be profitable. Insects like the boll weevil can actually take the entire crop in a bad year. It is unlikely we will ever grow cotton without using insecticides. Cotton clothing is comfortable, affordable and good for our economy. The most effective thing any consumer can do to support the U.S. economy is to buy cotton clothing manufactured in this country with native-grown cotton. When corn is sold, the dollars turn over three times and someone consumes the product. Cotton is sold such that those dollars turn over 12 times before someone wears a pair of blue jeans.

Beekeepers do not generally get

paid for pollinating major row crops like soybeans or cotton. Usually, the beekeeper is expected to provide the landowner with a little honey to rent space for apiary placement on large farms. Cotton honey is mild flavored, bright yellow in color and granulates while you wait. Cotton honey, at least in my part of Missouri, is a premium honey with a distinctive, delicate flavor. Honey bees and cotton can be kept together if the circumstances are right.

Communication between the cotton producer and the honey producer is essential if both crops are to be successfully produced. The cotton producer who accommodates the bees will be rewarded with a little extra cotton for that effort. The beekeeper must be aware that some insecticide application will be necessary during bloom periods. In much of the United States, the boll weevil is the driving force behind many insecticide applications.

The female boll weevil lays her eggs inside the cotton flower buds, called squares by the cotton grower. A single weevil can lay 200 eggs, which will be adults in 21 days. If 100 of the eggs are female then 25 days later, that cotton grower gets 20,000 eggs for every one in that field last month. Since the eggs are not all laid the same day, there are weevils that emerge from cotton squares every day. In order to break this vicious cycle, a cotton grower will apply insecticide five times, four or five days apart. This intensive spraying kills boll weevils, but it also kills beneficial predatory insects like lady beetles, parasitic wasps, flower flies, assassin bugs and lacewings. This opens the door for other pests like aphids and various caterpillars, commonly called worms. The cotton producer is then forced to apply insecticides for other insects that might not have been a problem if it were not for the boll weevil.

The moths that produce boll worms lay 1,000 eggs that become

adults in 30 days. Aphids are even worse; they reproduce by parthenogenesis, which means that during the Summer, there are no males. Females give birth to live females without mating. This is similar to drone production among the honey bees. In the Far West, where pink boll worms and whiteflies are common, either pest may drive the insecticide regimen for cotton growers.

There are ways to reconcile cotton production and honey production. The boll weevil eradication program holds some hope of helping beekeepers and cotton growers to work together more easily. However, eradication requires massive applications of malathion insecticide for a couple of years to start. This often results in massive bee kills. During the initial phase of eradication, it may be best to actually move bees away from cotton fields. It should be kept in mind that malathion will only last for a matter of hours in the environment. If the product is applied late in the day then it will dissipate before the bees return tomorrow.

Timed separation of bees and insecticides works well to prevent bee kills. Most modern pesticides dry or volatilize away before the bees return to the field the following day if applied near sundown. The only glitch here is that a lot of insecticide is applied by commercial concerns who will use either an airplane or some type of vehicle sprayer. The commercial ap-

plicator will stay busy all day long and inevitably spray some fields during the middle of the day. The assassination of field bees during a two-hour period of that day may not cause a massive bee kill if the right insecticides are used. It is usually when the insecticide is carried back to the hive that serious bee kills result.

Insecticides that are volatile do

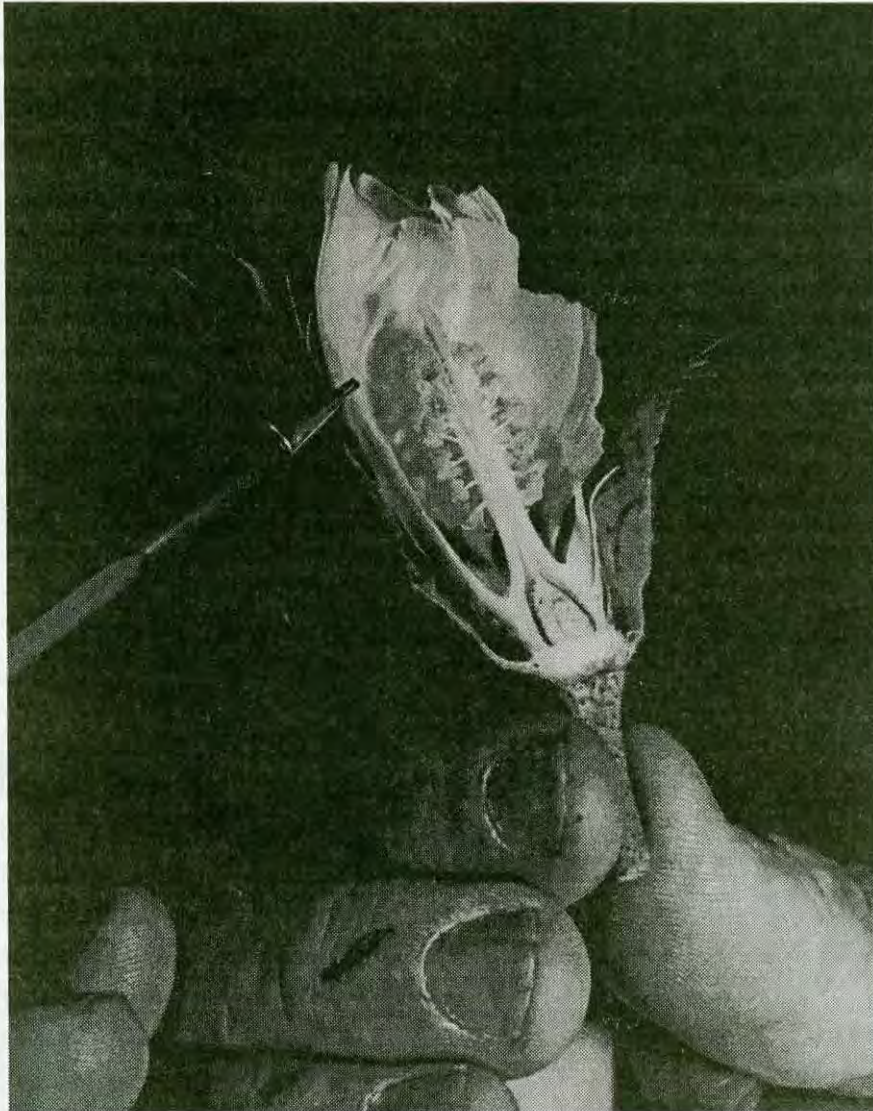
hive. These insecticides, like Sevin WP (wettable powder) and PennCap M (microencapsulated methyl parathion), should be avoided where honey bees are involved. Most organophosphate insecticides and pyrethroid insecticides will kill a field bee before she can return to the hive. When a single application of insecticide is made, this loss of field bees will not cause serious harm to the

colony. However, frequent and multiple insecticide applications can reduce the field force within a colony and may result in colony death.

If the cotton grower notifies the beekeeper 24 hours before an insecticide application, then he or she can move the bees out of harms way. Another tactic that will work is to put a wet, white cotton cloth over the hive of bees. This wet cloth will prevent the bees from flying during the application. The cloth must be kept wet so that the confined bees do not become overheated and will have a source of water available. This is not

practical certainly where large numbers of colonies are concerned.

Where boll weevils are not a problem, cotton producers normally control insects with a single insecticide application. Thrips are an early-season pest in some cotton-growing regions. This pest can be controlled most effectively by plac-



Cross-section of a cotton flower beginning to open about 8:00 a.m. showing anthers or pollen-developing part of the flower beginning to dehisce (discharge) pollen. Cotton flowers are capable of being cross-pollinated by bees only from this period until around noon of the same day. (USDA photo)

not usually last very long unless kept in controlled circumstances, such as a beehive. Malathion used in boll weevil eradication will rarely make it back to a distant apiary. There are, however, some wettable powder formulations and microencapsulated formulations of insecticide which will ride on the field bee back to her

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Cotton flowers, and the extra floral nectaries are very attractive to bees. They can also be deadly.

“Eradication of the boll weevil and limiting insecticide application to afternoon and evening hours is our best hope for future cotton honey production.”

bees. Bees normally do not visit cotton until temperatures get above 70°F. The bees also leave cotton in the afternoon when temperatures are over 90°F. The insecticides used during the day should be limited to those that are either not toxic to bees, or those that are extremely toxic to bees. If the field bee is contaminated with a bee-toxic insecticide that kills her before she can return to the hive and contaminate brood and house bees, this is an advantage. The production of cotton and honey on the same land requires communication between the two producers involved and a commitment from both parties to work together for the mutual benefit of both. When you think about it, isn't that the same relationship the bee has with the flower? **EC**

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ing a systemic insecticide in the furrow with the seed at planting. This avoids any bee contact whatsoever.

There are new formulations of diseases that kill caterpillars but do not kill bees. These are usually bacteria or viruses. However, these formulations are expensive and not always effective. Finally, most botanical insecticides like rotenone,

sabadilla and nicotine are just as toxic to honey bees as to the target pest.

Eradication of the boll weevil and limiting insecticide application to afternoon and evening hours is our best hope for future cotton honey production. Insecticides can also be applied in the early morning hours to avoid some contact with honey

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Our Bee Club – Part Two

LEARNING AND WORKING TOGETHER

Don Jackson

Setting up an apiary, building bear fences, treating diseases and harvesting are all part of the fun, and the work of this bee club.

Bee club members everywhere have one thing in common – the desire to learn more about bees – so our club set up a group project to keep a yard of bees. Part One of this series of articles (November 1997) described how we put our heads together to cooperate in this effort, donating equipment, sharing expertise and learning from each other, and helping new beekeepers get some real down-to-earth, firsthand experience. Some of our club members were quite excited about the program – you know how motivated beekeepers get! And the enthusiasm reminded me of a discussion I had when I graduated from college and was looking for work. I was interviewed by a fellow in charge of the business office at one company. He related to me his account of having attended a national bee convention in Minneapolis to see what all the

fuss was about. His conclusion was that he had never seen people so crazy about their bugs. “Why don’t you go up north and go into beekeeping?” he asked. Three years later I had my own bees!

An active bee club is a good vehicle for venting group energy on bees. Add a demonstration yard of several breeds to the program and you have a sure bet that will gobble up some of that energy. We learned from it all, and some of what came out of the project was quite unexpected. This short article has the purpose of giving you more details of our progress in this direction.

The first potentially productive task at hand, after accumulating and remodeling the donated equipment, was to deal with the predatory problem of bears. Minnesota is black bear country, and beekeepers are constantly having trouble with the mon-

sters. Given the high price of bee equipment, as well as all the work and energy put into maintaining that equipment, most cannot afford to see that investment torn up by bears. In order to satisfy both those afflicted with hunting fever and those who want to protect the sanctity of wildlife at all costs, we have to build a good and effective energized fence around the proposed apiary site. The fence plan was not born in a vacuum, but there is an abundance of ineffective fences around apiaries in Minnesota. Most of their failures come from aspects which can all be remedied: grass and brush allowed to grow too tall that shorts out electrical fence wires, too much space between wires, too few electric wires, too low a voltage in the fence, and poor grounding of the fences.

A good design for a bear fence, therefore, took high priority, and all of the above problems were vigorously dealt with. Grass and weeds were regularly cut under the wires, the fence was made with six wires spaced six inches apart, and a high-capacity fencer with a regularly maintained marine battery was hooked up with four ground rods driven deep into the ground. For the duration of the project the bear fence was tested by wildlife, and it kept the animals at bay. The club members got to see a good fence design that would work in their own apiaries, and the design has helped me improve my bear fences. Naturally, our club wanted to help other beekeepers, so we made sure that our Division of Natural Resources wildlife specialist was available to explain the salient features of a good fence to anyone who wanted to come to those particular meetings. If you live in bear country, you too, can

Don Carlson setting fume boards on top of Fall honey supers.



build an effective energized fence, available for anyone interested to see.

A second item that became really important for the club project throughout its duration was dealing with pests and diseases. Determining what kills honey bees and how to prevent or control these threats is really a daunting task. I know from personal experience with a number of our state's beekeepers, from hobbyist to commercial, that this is an on-going learning process as well as one demanding diligence. A person just beginning beekeeping – facing mite and foulbrood diseases for the first time – hardly has a chance of making a go of his apiary without outside help. Our club members now realize this.

While foulbrood diseases have been around since early in the century, the two mites – *Varroa* and tracheal – are new to the United States. Dealing with these pests has been a prolonged learning process for beekeepers, and controlling or eliminating them usually takes a few years to master. Some still have not learned, and their bees continue to infect nearby operations. Perhaps some people should not be beekeepers because they are too “smart” to learn how to deal effectively with mites. And many have been so preoccupied with the mite problems that worries about foulbrood have been shoved onto the back burner. Increasing foulbrood levels, sometimes resistant to treatment with Terramycin, make this a real and growing threat.

Our club apiary project emphasized pest and disease detection, treatment and control. People get funny ideas about diseases and pests in their bees, and unfortunately, some of these people are “outlaws” when it comes to treating for them. Our culture is full of outlaw behavior – just turn on your television set and see how many shows are centered around miscreant behavior. Rumors have it that some of the beekeepers use illegal treatments for mites and for foulbrood; we are all in jeopardy if some of this stuff ends up in honey or wax on the public market.

The club goal was to use legal means, and to show how to do so properly, following directions. Not everything worked as advertised, so



Blowing bees out of a honey super. (Rose Zak photo)

that has been a good lesson for all of us, too. But, to summarize, we did the following:

1. Since this is a northern state where bees are often overwintered, beekeepers need to be aware of the sickness caused by the microscopic protozoan parasite, *Nosema apis*. When packages arrived, two gallons of syrup with the recommended dosage of the antibiotic fumagillin mixed in were fed to every colony. Studies have shown that bees in the warm climates also have nosema infec-

tions, but the disease is often ignored there because the bees do not go through the long periods of confinement during which the spores multiply to devastating levels by Spring. Many do not yet realize the reduction in honey crops caused by this sickness, so our club made the effort to show how to control nosema disease.

2. As the packages were being shaken into the boxes in the new apiary, a sample of bees was taken from each package, placed in a jar,

Before and after extracting each super was weighed to tabulate colony yields.



given a shot of ether, and shaken vigorously to dislodge *Varroa* mites. It is important in a group like this that someone take the responsibility to show how to do this simple "ether roll" test so that all the members present can then test their own colonies. The club then inserted Apistan strips into each colony, properly placed, hanging between the combs, so that all would know how. Later, in less than eight weeks, the Apistan was removed and disposed of, so as not to contaminate any budding honey flow or leave in the hives a *sublethal* dosage of the active mite killer, fluvalinate. Perhaps this will resonate in the Southeast to those of you who, I've heard, are now dealing with fluvalinate-resistant *Varroa* mites. A future club meeting could also demonstrate the use of a sticky cardboard placed under a number eight screen, with fresh Apistan strips in the cluster, to more accurately check for *Varroa* mites.

3. The foulbrood diseases were to be controlled by what was the rage at the time of the beginning of our club apiary - grease patties made with cooking oil, sugar and Terramycin. Placed over each cluster, on top of the brood frames, we figured that these patties would keep the combs as free of foulbrood as they appeared to be. The club got a good lesson in American foulbrood when the disease broke out uncon-

trollably in a hive of Yugoslavian bees, and the lesson continued for the club with a demonstration of good, old-fashioned dusting with powdered sugar and Terramycin that cleared up the foulbrood in a very short time. From this we learned that grease patties *that remain unconsumed* do not control foulbrood.

4. We had hoped that tracheal mites could also be controlled by using the extender patties. Three of the breeds were supposed to be mite resistant, but the patties were placed on all of the colonies. However, by the end of the first Winter a goodly portion of the bees had died, and microscopic examination of the bees revealed heavy infestations of tracheal mites in many of them, so the extender patties had not adequately done the job. The lion's share of the remaining bees died in the Spring after the second Winter, again from tracheal mites, so the few remaining hives became a demonstration for the application of menthol to control the mites. A sobering lesson here for all club members was the difficulty of keeping and wintering bees in the North with the presence of tracheal mites; and even today

members are saying that these mites are their biggest problem.

The future of our bee industry in America is tied to good disease and pest control. I think that every bee club should have at least one person who is well-versed in this aspect and is willing to help other beekeepers in this regard. It has become fashionable to do away with apiary inspections on a state level, but the need is still there for people to learn of the diseases that can infect their bees and how to treat for them. Our club apiary has helped fill this need, with a hands-on approach that can be used on home apiaries.

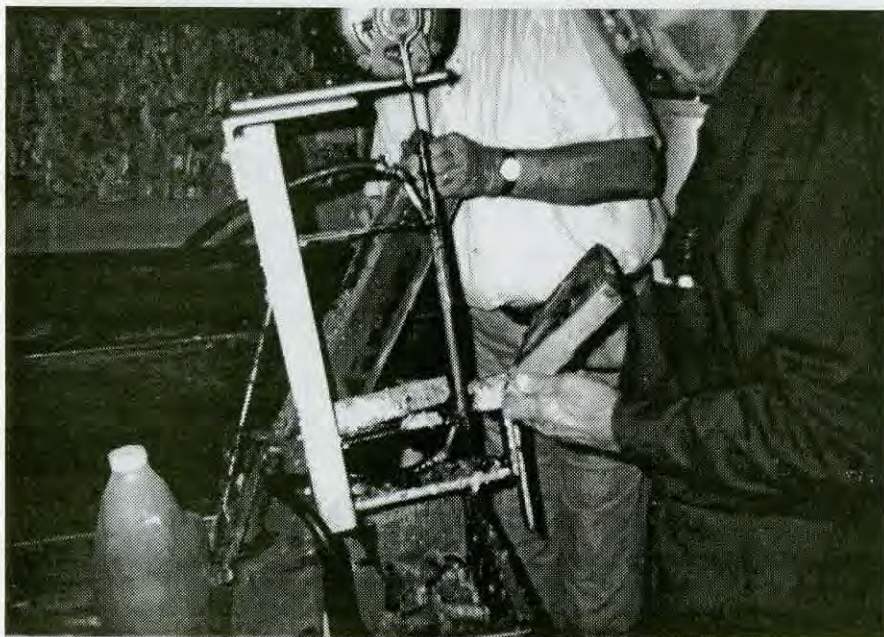
One of the major campaigns of our club apiary was the job of removing and extracting the honey crop. Most of us know how to handle our own honey harvest because we have done it for so long, but can you remember the first time? Good attendance at a meeting dedicated to "pulling" the crop told us that plenty of folks wanted help in this department. And, of course, all of us wanted to know which of the five breeds of bees in the apiary had done the best.

Simple things, like applying fume boards, brushing or shaking bees off combs, or blowing bees out of the supers, can be a daunting task to the uninitiated. Weighing, marking, and recording each of the supers of honey before and after extraction led to good record keeping. Sharing the know-how is a good task for a bee club, and we have plenty of members with that know-how. Quickly demonstrating each method and then inviting others to try it was our hands-on approach. Even just watching these tasks being done was adequate education for some.

In my own travels around Minnesota, I particularly enjoy visiting commercial honey houses during extraction. There are so many varied methods and kinds of equipment in use, and each outfit is an education in itself. Some are older and relatively low-tech (and low-cost), while

"Most of us know how to handle our own honey harvest because we have done it for so long, but can you remember the first time?"

Uncapping using Harry's A.G. uncapper, a vertical, vibrating hot knife.



others use the pricey, latest technology. Many can function only with four or five people to scrape, debox, uncap, load, extract, and box up combs, while other systems get by with fewer hands. I must confess that my own operation is set up for one person; and while I do not do as many barrels per day as the more advanced systems, my own "low tech" yields an acceptable poundage per hour for the number of people involved.

One of the questions most commonly asked by new beekeepers is how to know when the honey is "ripe" enough to remove from the bees and extract. Can it be taken off during a honey flow? How can you tell that there is still fresh nectar coming into the hive? Does all the honey need to be capped? How do you prevent sunflower and goldenrod honey from sugaring in the combs? These questions are easily dealt with at the apiary, and they are good questions, important in order to produce a top-quality crop.

Our bee club has several commercial members, but it was important to show that inexpensive used equipment and a little elbow grease can result in a successful operation for most of us. Things that we might take for granted are large concerns for someone facing the job of extracting for the first time. These include dealing with potential robbing problems, scratching combs not adequately uncapped by the uncapper, how to strain the finished product, how to liquefy and bottle it, and how to get it to market. Our members came out in force and rolled up their sleeves, getting involved in this learning-by-doing process.

For now, a final important item the club demonstrated was wintering. Wintering bees is such an important task in the North that one needs to work all year with that in mind. Of course, healthy bees, strong colonies and plenty of food in the right places are needed, but quite a number of our members needed help on the wrapping itself. Minnesota gets cold and the snow piles up, and the first Winter of our club apiary (1995-1996) just happened to be especially severe. The club demonstrated several different methods of packing hives for the Winter by asking for volunteers to wrap a few hives in the club apiary



View of the club apiary in the Winter. Some hives are completely covered with snow. (Rose Zak photo)

using their own methods. We found that the packing technique used by a lifetime beekeeper from Wadena seemed to work the best. Placing the hives in pairs on pallets and setting several thicknesses of newspaper over the holes in the inner covers came first, followed by surrounding the pairs tightly with building sheathing on the sides and also on the tops, gave excellent protection. The wraps were very tight, and only an upper entrance, off toward one side, was needed for cleansing flights and ventilation. When we checked the bees during a warm spell in the Winter, these particular colonies seemed the most com-

fortable and the clusters were not all that tight; they also wintered well . . . the first year.

There were other things the club did to mentor beekeeping, and all that happened could fill a book. You can imagine some things of interest yourself, things you might want to try but just never got a chance to or found the time for, things that would be fun to share with others. We did some of them, but I'll save more choice activities of our bee club for next time. **EC**

Don Jackson keeps bees and is involved in his local bee club in Pequot Lakes, Minnesota.



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TIME TO MOVE?

James E. Tew

For many years Clarence Eck was the undisputed master beekeeper in Wooster, Ohio. He looked the part. He was a big rotund man with thin white hair, a deep voice, and an easy husky laugh. Though he was widely known as an expert lath plasterer, his beekeeping interests were better known throughout this region. Some of the very first bee meetings held in Wooster were around the wood-burning stove in his workshop. Nearby, he had a tiny extracting room attached to a tiny sales room. Just outside the extracting room, he kept his small home yard - about ten colonies. This small apiary was separated from Layton Elementary School's big playground by nothing more than a wire fence. Through the years, thousands of kids mingled with hundreds of thousands of bees. Nothing ever happened. Who of you reading these words would put bees in such a location today? Not many.

Mr. Eck had another yard only a few miles up U.S. Route 3, north of Wooster - a well-traveled farm road going straight to Medina and passing near the A. I. Root Company. The yard was hardly a ten minute drive from his home. To get to it, he simply had to leave the road by crossing a small culvert, up a grass lane, and there

on top of a glaciated knoll was a scenic bee yard that Mr. Eck had maintained for years. He kept around 25-50 hives there. Though not a big city, Wooster has enjoyed (somewhat) continual growth for the past 30 years or so. Route 3, just north of Wooster, was not to be left out of this miniature urban sprawl. The Ford dealership moved just across Route 3 from Mr. Eck's bee yard. (Those of you having kept bees for any length of time know how the story goes from here). The dealership prospered and an increasing number of new & used Fords came and went. The only problem was - from Day 1 - the dealership had serious problems with "bird droppings" which required washing the cars on a daily basis. I was very new in Wooster when all this was unfolding so I don't know all the specifics, but I do know that someone figured out that it was not bird droppings. It was bee poop. Did someone from the Ford dealership see Mr. Eck going to work his bees? Did another beekeeper rat on Mr. Eck? I don't know, but the people at the Ford dealership on Route 3 found the source of their problems. With threats of legal action, Mr. Eck, and the land owner, gave in to their demands and moved the yard. Ironically, just a couple of months ago, Mr. Eck's old

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 BEE CULTURE



YOU & THE LANDOWNER

Richard Bonney

Many, perhaps most, beekeepers are content to keep all of their bees in their own back yard. (That's why so many of us are called back yard beekeepers.) At least a few of us, though, get beyond ourselves, outgrowing our back yards. We seek outyards. I know it happened to me, and at one time I had about ten outyards scattered over a two county area. Each was different, and some of them gave problems of one kind or another, some minor, some major.

Some of these problems were my own fault and could have been avoided with a little forethought. In the early days I was eager, and a couple of times I was so happy to find a site that I moved in without asking questions, without looking the site over carefully, without having any but a casual understanding with the landowner. This understanding is important.

Now, I am talking of outyards here, locations in which hives are placed on a more or less permanent basis. I am not talking about placing bees for purposes of commercial pollination where a fee is involved. Outyards are usually approached a bit more casually, since there is rarely a financial arrangement. A beekeeper finds an amenable landowner, arranges to put a

hive or two in an unused corner, and that's it. But as stated, problems can arise. How do we avoid them?

One way is to make a list. What are the things that matter? What are the things that can go wrong? Once you have the list, think through each item and come to a clear understanding with yourself. Then, when you approach a prospective landowner you have the basis for an intelligent discussion.

What are some of the points that are important to you, and from which your list might grow? That is, what makes a good outyard?

- A landowner who understands the implications of having bees on the property.
- The degree of isolation of the site.
- Year round vehicular access.
- Day long access.
- What other use is being made of the property?
- What use is being made of surrounding properties?
- What is the attitude of the landowner's family members towards bees?
- What is the attitude of any neighbors towards bees?

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bee yard location was completely clear-cut and graded. It's rumored that the Pontiac dealership is going in there. Go figure.

Where is all of this going? For the long term future, there will never be any more hives near the Layton Elementary School playground or on Route 3, across from the Ford dealership. Mr. Eck had two good convenient yards that will not be available to beekeepers again. There are situations like this everywhere. It's frequently said that "Times have changed." Well not really. People have changed. What should the characteristics be for today's bee yard? When does a beekeeper, who has an established yard, give it up due to urbanization? Broadly speaking, there are two types of bee yards - those in town and those that are not in town. It's the beekeeper who wants to keep bees in (or around) town who's having to face these changes. Forget mites or American Foulbrood. The biggest enemy of the urban beekeeper is *neighbors* - the people you see every day. The urban beekeeper will have to deal with them on every turn.

Though the main characteristics of modern bee yards have not changed, there have been great changes in where yards are found - especially in urban areas. The convenience of the yard is still a major consideration.

Convenience Common sense dictates that there is little value in finding a good location that is a couple of states away from you. You'll spend all your time and money driving. Hold that thought for a second. Can I cautiously speak for many backyard beekeepers who want to come home after work, slip into a comfortable bee suit, take a short walk and work their bees? Again, it's the neighbors, or maybe the neighbor's animals, that can cause you problems. Even as I write these words, I have three neglected hives hardly 100 yards from me, but I have neighbors on both sides of me who are hardly 50 yards away. It's a great location, but it's difficult to be discreet with a full bee suit, a veil, and a smoking smoker. Neighbors notice things like that. And though they may not say something right away, my bees have had a way of coming up in subsequent conversations. Bottom line - convenience is a great bee yard attribute, but it's not always worth the hassle.

Yard Accessibility Closely akin to convenience is accessibility. A location is hardly convenient if you can't get to it. How can that happen? You had to be able to get to the location to put the colonies there originally - right? Yards change. From personal experience, some of the things that have changed after I set up a yard have been: flooded pathways, plowed (and planted) pathways, new gate locks, and new land owners.

A concept that I have been considering for the past few years involves a way to have both a convenient and accessible yard and that is to simply grow it. I know this suggestion has serious limitations, but why not consider laying out a yard, planting trees (such as Spruces) or bushes (maybe Privet) that will grow to provide you with a shaded, private apiary site on your property. As I get older (and older), ideas such as this one have increased appeal to me rather than all the loading and unloading that is required to prepare for a trip to

an outyard. However, I need to think about this idea more before suggesting that you implement it. For instance, how do I prepare for excessive shade as the trees mature or will the yard become too crowded with growing branches. Overall, I like the idea of a three sided apiary compound with the fourth side closed-in by a small utility shed for my smoker, fuel and extra bee equipment. A much quicker variation on this concept would be to simply put up high fences, but I am afraid that it would look like a small version of Fort Bragg in your backyard. Regardless, the point is that the urban beekeeper may be pushed more and more to devise or build a convenient, accessible bee yard rather than just luckily finding one all ready to go.


Dependable Water Supply Besides being convenient and accessible, an urban or suburban beekeeper needs to consider other ideal site characteristics one of which is a dependable water supply. Except for the Western and Southwestern areas of this country, readily available water year-round is not a problem . . . but even in areas with abundant water supplies, problems turn up when the dependable water supply is your neighbor's pool or bird bath (here we go with the neighbors again). How much truthfulness can you stand? Keeping a dependable water supply on your property or in your apiary will certainly help, but some of your bees are still going to visit your neighbor's pool no matter what you do. You simply can't stop them. Perhaps putting in your own pool would help the most.

Pesticide Exposure The relationship between the suburban beekeeper and the ill-effects of pesticides is currently in flux. If the backyard beekeeper can find a place within the community, pesticide use will *probably* be of little consequence. More and more, people have become reticent to whimsically apply insecticides and in many cases will even over-react to any pesticide use. But the public (including your neighbors), has a way of vacillating wildly. Even now here in the Wooster area, there is an annual issue concerning the mass application of Ultra Low Volume (ULV) Malathion to control mosquitoes that are carrying encephalitis. Within the application area, there is really no safe area for a beekeeper to keep bees. Again, your neighbors can be your best friend (minimal pesticide use) and your greatest enemy (support of extensive pesticide use) at once.

Nectar and Pollen Sources There are only a few places on the planet where bees can't be kept at least part of the year, but nectar and pollen considerations are still important when thinking of setting up a bee yard. For several years, I had bees quite near my home. The yard had many of the requisite characteristics for a good yard (e.g. it was convenient, accessible, it had good wind protection, minimal pesticide use, and was well drained - both cold air and water), but the worst characteristic was that it was surrounded on all sides by potatoes, wheat, and corn. Though I made honey, the yard never made as much as yards just a few miles away. But having said that, can you believe it? Because so many home owners plant ornamental flowers, many suburban beekeepers get a good honey crop within town limits. The kind of flowers planted don't really matter

so long as they produce nectar and pollen. Then there's also the ubiquitous White Dutch Clover, the beekeeper's lovable weed that chronically infests the lawns of homeowners everywhere. In articles past I have told of my exploits in leaving blocks of unmowed lawn that all pollinating insects could use for lunch. Consequently, my lawn is a yellow beacon (massive dandelion growth) in early spring and motley white in mid-summer (White Dutch and other clovers). During late summer I mow everything, but I leave a golden rod planting around my wood pile. Though it's off the subject, what does the urban beekeeper name his honey crop? Since most of the flowers are intentionally planted, it cannot simply be called "wildflower honey." How about "Suburban Flower Honey" or "Landscape Blossom Honey"? Regardless of the name, it is a surprisingly dependable minor nectar source. It's even irrigated by the homeowner.

For nearly 30 years, I have been party to both getting and losing bee yard locations. Yards come and go for many reasons. During those same 30 years, I have written many pieces on finding the perfect bee yard. Even now I can easily list the major features which a beekeeper should be looking for in a good location. They are (in no order of importance): (1) Dependably accessible; (2) Convenient; (3) Dependable nectar and pollen sources; (4) Minimal pesticide exposure; (5) Dependable water supply; (6) Wind breaks, sun or shade as needed; (7) Well drained of both water and cold air, and (8) Scenic (This is optional, but I really like a pretty yard). But having given you the list, I must now say you can find a location with all those features and still get in big trouble if the Ford Dealership locates just across

the road from your perfect yard. I have no pedestal for great insight, but people have changed during the last 30 years. The average person today has never seen a chicken lay an egg nor watched a steer being butchered. Eggs, milk and hamburger come from the grocery store - not from animals. Within this piece, I have been pretty hard on neighbors. Personally, I have considerate, polite neighbors, but even they have had their moments when my swarms landed on their property (They said, "My bees got away!") or when yellow jackets built beneath one of their decks I got a call telling me to come get my bees (They said, "My bees got away!"). For the urban or suburban beekeeper, I firmly believe that far more important than physical attributes of the location, is the discretion and demeanor of the beekeeper. Before any yard can go into any populated place, the beekeeper must be able to (1) get along with people. And as importantly, (2) the beekeeper must know when to give a yard up. A very close (3) is that the beekeeper must be competent in controlling and managing his or her colonies within that area. I'm afraid that bees in an urban area will soon be considered to be in the same category as exotic pets. Don't keep bees where there are regulations against it, keep your colonies out of sight, keep your bees under control, avoid apiaries on property lines, be as discreet as possible when working colonies, be patient with your neighbor's fears, and know when to move your bees out. Never, ever let it go to court. 

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

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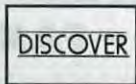
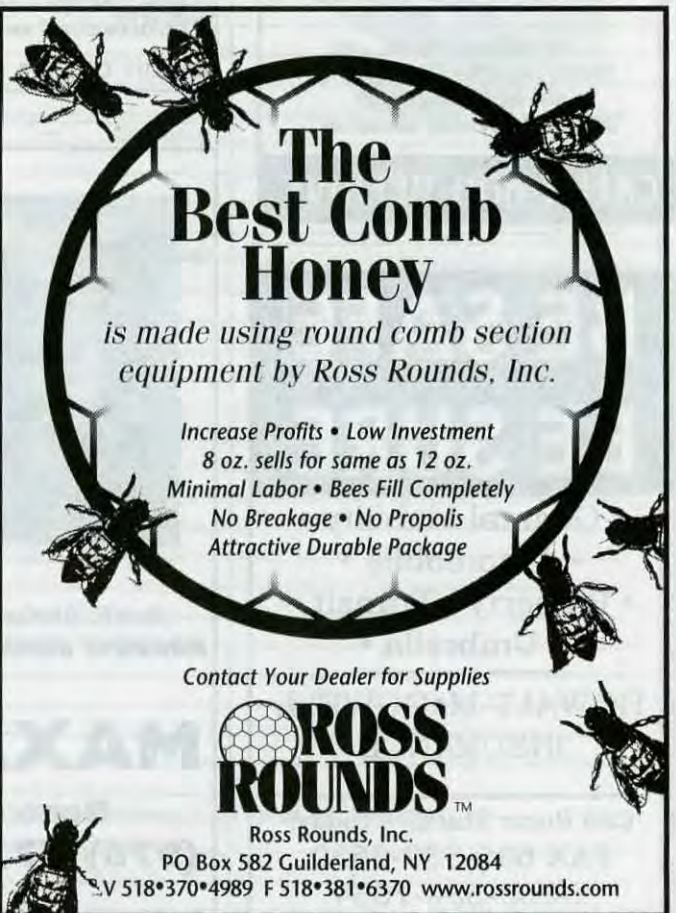
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You can add more to this list to reflect your own concerns and needs. Some of the answers to the questions implied or stated here can be determined by inspecting the site. Others may mean asking questions of the landowner and perhaps of the abutters. Either way, they can best be asked if these questions are thought out and written down in advance. With a carefully prepared list, you are reasonably certain that you have covered everything, and you have the questions and desired answers firmly in your mind so your conversation with the landowner is productive.

Historically, the large body of beekeepers have not formally paid rent for the use of land for a beeyard. The benefits have generally been considered mutual. The beekeeper has the use of the property, the landowner receives the benefits of pollination, whether it be for a kitchen garden, a few fruit trees, or a larger scale commercial operation. Further, the beekeeper in most instances gives the landowner a quantity of honey at the end of each season.

In recent years there has been a slight trend to landowners asking a cash rental fee, but this, as far as I know, is still not a prevalent movement except perhaps with some of the larger operators in situations where sites are in short supply. For small operators, it

seems best to continue with the no cash fee position. For my own part, I have never broached the subject of a fee when approaching a landowner, and no landowner has ever asked for a fee.

Perhaps, after coming to an understanding with the landowner, a written agreement will result, to be signed by both parties. This will be, in effect, a contract and a written contract can be a delicate subject if proposed by the beekeeper, who is, after all, usually a supplicant. Why should the landowner sign something which brings little or no advantage?

Of course, sometimes there will be advantage to the landowner, and we have a different situation. Every arrangement must be viewed separately and on its own merits. But even if there is nothing signed formally, it is beneficial to have something in writing that has been thoroughly discussed and is understood by both parties, with each participant retaining a copy. Such a document can prevent future misunderstandings. A typical agreement might be as illustrated, and would reflect the following thoughts:

1. The date (and term, if applicable) of the agreement.
2. The beekeeper's name, address, and day and evening telephone numbers. In addition to establishing who you are and where you live, be sure that the landowner can find you quickly in case of need or emergency - if a swarm

BEEYARD PLACEMENT AGREEMENT	
1. Date: _____	Term of Agreement: _____
2. The Beekeeper:	Name _____ Address _____ Phone: Day: _____ Evening: _____
3. The Landowner:	Name _____ Address _____ Phone: Day: _____ Evening: _____
4. Hive owner: Name _____ (if necessary)	Address _____ Phone: Day: _____ Evening: _____
5. Location of the bee yard: _____ (exact legal, directions & map)	
6. Number of colonies to be placed (annual fluctuations - range): _____	
7. Beekeeper modifications to site: _____ _____	
8. Purpose of yard: _____ _____	
9. Required notice from landowner for removal: _____	
10. Required notice from beekeeper before removal: _____	
11. Insecticide use on property: _____	
12. Livestock kept on property: _____	
13. Human activity on and around beeyard site: _____ _____	
14. Responsibility for public liability for stinging incidents; adherence to local ordinances: _____ _____	

is out, or pesticides are about to be sprayed, for instance.

3. The landowner's name, address, and day and evening telephone numbers. Of course, the "landowner" might not be the owner at all, but a tenant. The beekeeper should think carefully about the ramifications of this, especially if a signature is involved. How permanent is the tenancy? What is the true owner's attitude toward bees? Does the tenant have the right to enter an agreement with the beekeeper, either verbally or in writing? I alluded earlier to problems I had. One of these was a problem that never came to fruition, but the potential was there. I obtained permission from a local grower to place hives on his property and to drive through an adjacent field to gain access. After occupying the yard for about a year I learned that the grower was renting the location where the beeyard stood, and the field through which I had access belonged to a third party. To avoid any possibility of later problems, I moved.

4. Hive ownership; who owns the hives. This should not be a question, but strange things happen. In one instance, I know of a beekeeper who rented a house on a farm. With permission from the farmer, he set up two hives in the yard of his rented home. Later, when he went to move to a new home, the farmer claimed ownership of the bees. His position was that the bees were livestock and he, the farmer, owned all livestock on the farm. The bees were removed in the night and that was the end of that.

In another instance where a beekeeper kept hives on a property with permission, the landowner died. The beekeeper decided to remove his bees from the property, since it was to be sold. The widow tried to prevent the removal, claiming ownership of the bees.

5. The specific location of the bee yard site on the property, and of the acceptable access routes. A sketch map is desirable. A legal description of the location is even better. Then, what is the condition of the access routes at different times of the year; can you always get to your hives. One of my yards was nicely situated at the far edge of a large commercial strawberry operation. I moved in during the spring, but discovered in the summer that at irregular intervals the grower laid irrigation pipes across the access road in several locations, making the road impassable to vehicles. I had to walk about a quarter of a mile to get to the hives. The first time I realized this problem, I was bringing in a load of supers to be installed in that yard. Even empty supers are heavy when you have to carry them for a distance.

6. The number of colonies to be placed. Both minimum and maximum numbers should be stated. The landowner may be visualizing one or two, the beekeeper twenty or so. Know this before you start moving bees. The landowner may not mind a larger number, but don't let it come as a shock.

7. The presumed impact of the beeyard on the site. For instance, will the beekeeper erect an electric fence? Will the beekeeper be cutting grass and brush? Will the beeyard interfere in any way with present use of the land? On two occasions I have had to remove a yard because the bees would not allow grass or hay to be cut on adjacent property.

8. How will the beekeeper be using the yard? Possibilities include honey production only, package or nuc production, queen rearing, or as a home yard for colonies periodically taken away for pollination. Each of these activities requires a certain frequency of beekeeper visits, a certain disruption to the bees, and each has its own impact on the neighborhood. Further, moving the bees out to pollinate elsewhere removes a benefit the landowner may be expecting.

9. How many days of notice must be given by the landowner when requesting removal of colonies from the property. Until enlightened, most people assume that a hive of bees can be moved at any time, on a moment's notice. This is the opportunity to discuss how a hive varies in size and activity during the year, the concomitant difficulties of moving at different times, and the impact on the bees and on the honey crop when moved. Here, too, should be discussed the value of a colony and how value is affected by moving, or by not moving if, for instance, pesticides are to be sprayed.


10. What notice, if any, is required from the beekeeper before bees are removed from the property. Although we are not discussing pollination contracts here, and pollination benefits to the landowner may not have been a consideration when placing the hives, perhaps the picture has changed. Even if it is for only a backyard vegetable garden or for a few fruit trees, the landowner may have come to count on the bees.

11. What pesticides will or may be used on the property, and what is the landowner's apparent attitude towards proper application? Does the landowner understand that honey bees are insects, and are affected by insecticides? Not everyone seems to understand this, obvious as it may be to us.

12. What livestock may be kept on the property? For instance, horses and bees often don't coexist well; other large animals may inadvertently knock over hives.

13. What human activity may occur on the property? The beekeeper must be aware of what activities normally take place in the vicinity of the hives - children playing, gardens being cultivated, recreational vehicles passing by, or anything else that might excite the bees. Such activities may not be immediately apparent when investigating a potential site, depending on the time of the investigation.

14. The beekeeper will assume public liability for stinging and will adhere to local ordinances. This means it is the beekeeper's responsibility to know pertinent laws and regulations. Furthermore, it may be desirable for the beekeeper to have liability insurance which specifically covers outyard situations.

Because of variations in local practice, or variations in land use from region to region, or because of yours or a landowner's particular needs, no single agreement will suffice. Consider the foregoing discussion, and the sample agreement as a starting point. Perhaps as they stand they will work for you. Perhaps you will modify them to meet your own situation. However, do have something in mind when you go to talk with a landowner. 

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

PREPARING FOR THE 21ST CENTURY

Edward D. Barlow, Jr. & Buzz Phillips

Some people make things happen. Some people let things happen. And some people wonder what happened. Which one will you be?

Ninety percent of what you need to know to make your business successful in the 21st century – whether your business is honey production, wholesale or retail honey marketing, crop pollination or honey bee stock development – lies outside this industry as you know it today. To get in touch with that information, with what you'll need to know you need to think Outside The Box, beyond your current experience. Unfortunately, the average American adults' awareness of what's happening today is five to seven years old. To change that, to not only bring yourself up to speed, but to get a jump on the rest, you'll need insights into what the future will be, you'll need to anticipate market and production trends and developments, you'll need to develop partnerships with related and very unrelated industries, and you'll need to continuously scan the business and production environment to do all of this.

But why don't we do this already? Why do most people want to go back 10 years or five years to when things were predictable – back to the 'good ole' days? What is it that gets in the way of our not wanting to, and not being able to see the changes that are happening – every day, every hour, around us?

There is a term – paradigm (pronounced pair-a-dime) – to describe this. A paradigm is a way of thinking that you've developed over time – past experiences, successes and failures – to interpret the world. Paradigms are useful. They act as a frame of reference to use to make decisions, to react to situations that

occur routinely, and to determine courses of action when new experiences are encountered.

But paradigms can be equally debilitating, for the same exact reasons. When you have a limited and defined frame of reference, the only choices available are predetermined. Paradigm Paralysis – A Terminal Disease of Certainty. We see what we want to see, not what's really happening in the world around us.

Actually, paradigms usually reflect a comfort level, or 'comfort zone'. Those who will do well in the years ahead are those who approach new situations, problems and even everyday situations with their eye on the horizon; frame these changes not in the context of what was, but what will be, then put themselves in, and keep themselves in, a zone of discomfort.

If you recall nothing else from this article, recall these two facts:

Things constantly change – today is different from yesterday and tomorrow will be different from today – if you don't know that, can't see that, won't believe that, it is because you *aren't* looking at the horizon, you aren't uncomfortable enough to have to look outside wherever it is you are.

Second, *everything has a life cycle*, a beginning, a middle and an end. You, your extractor, your retail honey label, your business. It is important, that you know where you are – new products need to be started, profitable products need to be supported and unprofitable products (management techniques, day-to-day equipment, five gallon pails as product, suppliers who don't offer the lat-

est and best) need to be let go.

A scary life cycle example is that of the 500 companies on the Fortune 500 in 1992 – that's only six years ago – only 192 are still on that list. That's a 60% drop in only six years.

Here's why. As soon as you have met your customer's needs you have established the base line. From then on if you simply give them *what you gave them yesterday* they're bored. They'll shop for something with added value. And somebody out there, somebody that you didn't even know was a competitor will supply that added value. When a customer says "been there, done that," you're in trouble. The time between creation and obsolescence is getting shorter and shorter.

To stay off that list of casualties just mentioned, here's what you need to do. Here's the minimum of what a business needs to plan.

First, *have a five to seven year understanding* of the business environment in which you operate. Second, *have a three-year dedication of resources* to make necessary changes in systems, marketing, delivery and when necessary, people changes. Third, *a one-year operating plan* that is literally updated quarterly – every 90 days this industry changes – imports, pests, good or bad crops, competitors, government rules and regulations – which will make *you* adjust that three-year dedication of resources and even that five to seven year understanding.

How to do this? Start with this future outlook, but *then, and only then* look at your past. Is there something you can keep, something you *have* been doing that has future

Continued on Next Page

value? Then, what from the past needs to be modified? Remember life cycles? What do you need to let go of? If it's not working, bury it. Be honest. Be critical with laser light focus. Be done with it and get on with business.

What is your vision, your mission? What business are you in, really? You want to know? Here, read this.

"You are *NOT* in the business of honey production, *NOT* in the business of stock production, *NOT* in the business of bottling honey. You *ARE* in the business of supporting consumer life style and dietary choices." Let's look at some life styles that are in your future.

Of the 25 percent of America that claims Spanish as their native

was sold, it only replaced one that wore out – no net gain! With a population growth of only two or three percent, there's a problem. But, go to one of these developing countries, with a growth of eight, nine or 10 percent – and you've got a real growth economy. If your market doesn't grow rapidly, and people already have what you have to offer they don't, and won't, replace it. Remember the 'Been there, done that,' philosophy?

If people already have what you offer they don't it need anymore – no replacements, and no new growth. That's why future-thinking companies are looking globally rather than pushing harder locally.

From a supplier's standpoint you have two options – steal customers from another supplier in a fixed or replacement economy, that has low margins and high competition, or

to *easily* get temporary green cards so people can *easily* come here to work. And, we need to make it easy for them to return home. We do not have enough people here to fill all the jobs we are creating (remember the service jobs, mentioned earlier, *and* the fact that many (most?) speak, think and dream in Spanish?)

What about a population that routinely lives to be 100, or 125, or even 150? Is this a market we haven't yet tapped, need to tap or reinforce? And what products will these people want *then*, that we should be developing *now*, so the product is waiting?

Electronic technology too, is changing faster than most of us can see. Right now, you can have a pager, with global access, cell phones with the same, portable computers, to find the answers to the questions that come in over that phone, and all without needing a hard phone line or electrical connection. Instant access to anyone, anywhere on the planet is possible. Think what that does to inventory control, crop reports, price changes and . . . And, if your competitor or your customer has this and you don't, will you be one of those "Who wondered what happened?"

From the standpoint of diet, by the year 2005, the five-meal-a-day plan will be in full force. There'll be a 'day-start' breakfast, about ten a 'pulse break,' at noon a 'munch-lunch,' around four you'll have a 'hold-meal' and you'll finish with an 'eve-snack' sometime in the early evening. Now, where do honey, honey products and honey marketing fit in this schedule? And coupled with a very different eating schedule and diet, the actual work day, and work environment will be different. By 2010 only 15% of Americans will work for large corporations, 35% for medium to small businesses . . . and fully half will be self-employed. Why? Because large corporations, by their very nature, don't react fast enough to address consumers' constantly changing 'wants', and are simply geared to continue to produce that which they've been producing. But remember the 'been there, done that' attitude of consumers? Small companies can react, can change rapidly, and aren't isolated from consumers. Instant customization is possible, and will be (already is?) ab-

"Of the 25 percent of America that claims Spanish as their native language, 68 percent still dream, and interpret their world, in Spanish. Now, does a product marketed with English-only labels and instructions and WASP only Icons relate to somebody who sees, and dreams the world in another language?"

language, 68 percent still dream, and interpret their world, in Spanish. Now, does a product marketed with English-only labels and instructions and WASP-only Icons relate to somebody who sees, and dreams the world in another language?

Other transitions that affect the future. By the year 2000 the world's population will increase from today's five billion to six billion and nine billion by 2030. That's massive, very massive population growth, but do you know *where* that growth will occur? More than 90 percent of that population growth will take place in developing countries.

Couple this with the concept of a replacement economy. That's an economy that only replaces what wears out – take automobiles. In Canada last year, for every car that

find new markets with higher margins and less competition. You decide. But know this, by the year 2020, seven of the top 10 growth economies will be in the Asia/Pacific region.

What about the people who do the jobs needed to be done? In 1865, half of all Americans earned their income on the farm. Today, less than two percent do because of technology and mass-production techniques. In 1950 half of all Americans earned their income in low tech, blue-collar jobs. Today – only 17 percent do that, and by the year 2005, only five percent will.

Another thing we need to do, to provide for these jobs *not* requiring a college education is to partner with the INS (Immigration and Naturalization Service). We need to be able

solutely necessary to stay competitive in the next decade.

So, where is the growth industry of the future? You need to know this, you need to know that the growth will be travel, tourism and hospitality. How can you tap that growth market, with honey, honey products, agrotourism projects, or whatever?

All of these options can be, and should be viewed as risks – multiple uncertainties. You can, and should share these risks, reduce the uncertainties. Partnering with like, and very unlikely organizations for collective R&D can not only solve 'internal' problems, but bring in new and different perspectives. Remember, 90% of what you need to know to make your business successful in the 21st century is *outside* this industry as you know it today. Those future challenges and future opportunities will only be handled with partnerships – and you don't even know who those partners will be, yet.

Let's wrap this up. Leaders, industry leaders, business leaders, or you as a self-motivated self-starter, must take this knowledge and information to craft visions, inspire action and empower others from diverse disciplines, organizations and background to find common causes and common ground in the industry, the community, the country – even the world. And you had better be obsessed with customer satisfac-

"A scary life cycle example is that of the 500 companies on the Fortune 500 in 1992 – that's only six years ago – only 192 are still on that list. That's a 60% drop in only six years."

tion – in an environment where what it takes to satisfy that customer changes, every week, every day, actually, every time he or she buys a single, solitary product. That means 'real-time' responsiveness because everything, everything happens fast. Not even five minutes. You've got to be constantly in the process of becoming, because if your not, somebody else will be.

You've got to seek, no you've got to strive for that level of discomfort, and develop a healthy dissatisfaction with the status quo. If that makes you uneasy, maybe you're on the right track. But if you're still operating under the umbrella of "I started young, I liked it, and I just stayed with it," the rain will stay and

stay and stay.

The future? It's developing job opportunities. New technology. Major systems changes. New consumers. More than one, and even better three languages. Travel, hospitality and tourism. Life cycles, and always shorter life cycles for the products and services you deal with.

Some people make things happen. Some people let things happen. And some people wonder what happened. Which one will you be? EC

Edward D. Barlow, Jr. holds a master's degree in management from the University of Notre Dame, is a member of the graduate school faculty at the University of San Francisco and has held executive positions in business, healthcare and education.



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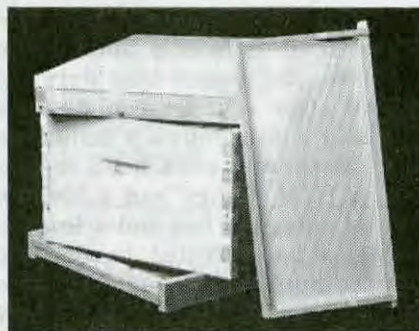
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BUCKFAST BEES FROM CANADA

Barry Davies

History has shown that honey bee tracheal mites (HTM) have been responsible for the deaths of thousands of colonies in North America since their discovery here in 1984. Beekeepers in Ontario, Canada were fortunate to have a period of about 10 years to prepare for HTM. We have tried to use this grace period to establish ways to keep our bees alive.

If bees could live in other parts of the world with HTM constantly challenging their existence, then this same stock of bees should also be able to ward off HTM here. Brother Adam's "Buckfast bee" was the most reliable source from which to obtain bees resistant to HTM, and in 1990 the University of Guelph imported from Britain (under federal quarantine) queens from Brother Adam. After quarantine these queens were introduced to colonies. The apiculturist at the University of Guelph checked the offspring for resistance to HTM using the "quick test" (bioassay test developed by Drs. Norm Gary and Robert Page) where newly emerged bees were tagged with numbered colored tags and introduced to heavily infested bee colonies. The tagged bees were recovered after seven days, dissected, and the number of mites counted. Bees were considered resistant to HTM if they had a low number of mites per bee and a low percentage of bees infested. In comparison to nonselected stock the Buckfast bees showed a high level of resistance to HTM.

The apicultural researchers at the University of Guelph told the industry that they would help with the initial imports but could not accept the responsibility of maintaining the Buckfast stock on a long-term basis. The three ingredients of successful beekeeping are environment, management and genetics. With this in mind, the University of Guelph, Rick Neilson, Paul Montoux and Barry Davies agreed to enter into contracts with Dart Abbey Enterprises Ltd (the legal entity of the charity of Buckfast Abbey) to become

"Authorized Users" of the honey bee developed by Brother Adam. We pay a royalty to Dart Abbey Enterprises Ltd on sales of Buckfast stock to help maintain and further enhance the Buckfast bee. The University of Guelph facilitated two more imports of queens in 1993 and 1995 to diversify the genetics.

In Ontario, we have relied on our honey production and pollination for most of our income. Therefore, it was critical that these new "Buckfast" bees survive the Canadian Winters, and pollinate and produce honey as well as or better than the stocks we were presently using. Gentleness and low swarming are outstanding characteristics of the Buckfast bee.

In 1994 a test apiary was established to field test three different stocks of bees that showed resistance to HTM and one which was susceptible. All were young queens of the same age and marked for identification. Some interesting facts were observed. The Buckfast group in honey production out-produced the test apiary average by 17 percent and 27 percent better than their closest rival group, and they were the most gentle of the tested stocks. In September of 1995 86 percent of the Buckfast queens were leading their colonies into Winter whereas the other stocks only had 60 percent of the original queens going into Winter. In July of 1996 50 percent of these Buckfast queens produced another excellent crop and went on to Winter. The other stocks had mostly superseded, and the stock suscep-

tible to HTM had died after the first Winter. None of the colonies were treated with any chemical for HTM. All the colonies were constantly monitored for HTM with the Buckfast bees having a very low or no infestation of HTM.

We are optimistic about the future of the Buckfast bee. We are following the selection and breeding procedures suggested by Brother Adam. We annually select for honey production, winter-ability, gentleness and no visible symptoms of diseases. The Buckfast colonies with high scores are then subjected to a hygienic test and the quick test. This gives us the opportunity to select the top breeders from the Buckfast stock. Recent correspondence with Buckfast Abbey verifies their commitment to carry on Brother Adam's work in selecting superior bees. They are currently maintaining the different races of bees, selecting for *Varroa* resistance, and have added a new assistant to the bee department. We are proud to be the "Authorized Users" of the Buckfast bees for Ontario and to join the other five Buckfast breeders located in Nova Scotia, England, Denmark, Germany. **EC**

Barry Davies is a commercial queen producer from Seeleys Bay, Ontario.

Queen bees can be legally purchased from Ontario, Canada, but expect mid-season production. For information contact: Barry Davies, R.R. #1, Seeleys Bay, Ontario, KOH 2N0; Paul Montoux, R.R. #1, Hagersville, Ontario, N-A 1H0; Rick Neilson, R.R. #1, Stratton, Ontario, POW 1N0.

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Ann Harman

Home Harmony

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"Eat it! It's good for you." Thus generations of mothers, while pointing to an amorphous blob on the dinner plate, have admonished generations of children. Chill out, Mom! It's the '90s! Healthy, nourishing food does not have to be boring and insipid. Besides, the addition of honey, with its flavor-enhancing qualities, can make good-for-you food even better.

Today with our modern technology, scientists have discovered some of the secrets of many of our ordinary meats, vegetables and fruits. Although we have cheerfully gobbled up many foods, such as tomatoes, because they taste good, we now know that tomatoes contain substances that seem to prevent some cancers and help control cholesterol. Tomatoes, along with many other common foods, including honey, have generated interest in discovering more about nutraceuticals - foods that can prevent or alleviate diseases.

In many parts of the world honey is considered as much a medicine as a sweet. Although some may consume spoonfuls of honey and delight in its sweetness, its health value is always promoted. Everyone appreciates the soothing effect of a spoonful of honey on a nasty sore throat. Recipes using honey for coughs and colds are given in *HONEY, NATURAL FOOD & HEALER* by Janet Bord. Here you will find the familiar mixture of equal parts of honey and lemon juice for a cough. However, the addition of brandy or whiskey is recommended for an obstinate cough.

HONEY HAND SCRUB

Honey is also good for the outside of you as well as the inside. In

addition to applying a facial of pure honey, various combinations of ingredients can invigorate or soothe your skin. Here's a recipe for a hand scrub that won't dry out your skin even during the dry, wintry weather.

Blend 3 tablespoons finely ground cornmeal, 2 tablespoons of honey and 1 tablespoon of cornstarch in a small, unbreakable container. Leave near the sink and use as you would any hand soap. It softens, cleans and soothes the hands, and should always be rinsed with cold water.

Nature's Golden Treasure Honey Cookbook
Joe M. Parkhill

GOLDEN BLOSSOM HONEY CURRIED BROCCOLI SOUP

Broccoli, as you know, has joined the ranks of good-for-you foods. Fortunately good recipes for broccoli are increasing so that we can have a choice of preparation. Plain broccoli does get boring after a while. Try this soup. The combination of curry and orange is wonderful.

1 head of broccoli, chopped with stems
2 cloves garlic, chopped
2 medium onions, chopped
5 cups chicken or vegetable broth
1 tablespoon honey
1 teaspoon curry powder
1/4 teaspoon orange zest
8 ounces plain, nonfat yogurt

Put first 5 ingredients into kettle. Stir well. Simmer for 30 minutes. Add curry and orange zest and simmer another 5 minutes. Transfer to blender or processor and puree, adding plain, nonfat yogurt.

Golden Blossom Honey Beeline

CARROT YOGURT SOUP

Now it is just possible that you simply do not like broccoli. That's

fine. There are some people who can taste a particularly disagreeable compound in broccoli and those people just do not want to eat it. So here is another soup recipe that can be enjoyed by many. The combination of spices makes it a special soup.

4 tablespoons butter
1 onion, peeled and chopped
1 to 2 cloves garlic, minced
1/2 teaspoon mustard seeds
1/2 teaspoon turmeric
1/2 teaspoon ginger
1/4 teaspoon cayenne pepper; add more to taste
1/2 teaspoon salt
1/2 teaspoon ground cumin
1/4 teaspoon cinnamon
1 pound carrots, scraped and sliced
1 tablespoon lemon juice
3-1/2 cups water
2 cups yogurt
1 tablespoon honey
black pepper to taste
garnish: chopped fresh cilantro leaves

Melt butter in a skillet and sauté the onions and garlic until they are golden. Add the spices and cook for several minutes, stirring constantly. Add the carrots and lemon juice. Continue cooking for several more minutes, stirring often. Then add 2 cups of the water, cover tightly, and simmer for at least 1/2 hour, or until the carrots are tender. Puree the spiced carrots in a blender with the remaining 1-1/2 cups water. Return the puree to the skillet and whisk in the yogurt and the honey. Heat the soup, but do not allow it to boil. Taste, correct the seasoning with black pepper and more cayenne and salt as desired and serve hot, with chopped cilantro sprinkled on top. Serves 4 to 5.

The Vegetarian Epicure Book Two
Anna Thomas

SUMMER SALAD DRESSING

Parsley has been of interest for its healthful compounds. Unfortu-

nately parsley is frequently used as a decoration and shoved aside. I think it tastes great, but I have received strange looks and comments when someone has caught me eating "the decoration." Here is a delicious salad dressing that uses parsley as a flavoring. You might want to be careful with the source of the egg you use, however. If from a backyard flock you're OK. But if it is a commercial egg you may want to heat it gently before using.

- 1 egg
- 1/2 cup parsley
- 1/4 cup chopped watercress
- 1 sprig fresh savory
- 2 tablespoons vinegar
- 1/4 cup chopped onions
- 1/4 cup oil
- 1 tablespoon honey

Process ingredients in a blender until smooth. Yield 1-1/2 cups.

Feasting On Raw Foods
ed. Charles Gerras

SAVORY MEAT AND VEGETABLE-FILLED PASTIES

Many people seem to run out of lunch suggestions and end up with the same old thing or something less than nutritious. You can make these pasties on a weekend and freeze them for future use. They may be served hot or cold. If you wish to serve them hot, they can be thawed and heated easily in a microwave.

Dough:

- 1 package dry yeast
- 1/4 cup warm water
- 1/4 cup milk
- 3 tablespoons melted butter, cooled to lukewarm
- 1/2 teaspoon salt, slightly rounded

- 1 tablespoon honey
- 1 beaten egg
- 1 cup whole wheat flour
- 1-1/4 to 1-1/2 cups whole wheat pastry flour

Filling:

- 2 tablespoons butter
- 1 clove garlic, finely chopped
- 1/2 cup finely chopped onion
- 1 cup grated raw carrot
- 1 cup grated raw cabbage
- 1 cup grated Swiss cheese
- 3/4 pound cooked ground beef, sautéed and drained of fat
- 3/4 teaspoon salt
- 1/4 teaspoon black pepper
- 3/4 teaspoon basil
- 1/4 teaspoon thyme
- 1/4 teaspoon celery seed
- 2 to 3 teaspoons Worcestershire sauce

To prepare dough: Dissolve yeast in warm water. Add milk, butter, salt, honey and beaten egg, mixing well. Beat in the whole wheat flour and work in the pastry flour, first with a wooden spoon, then by hand, enough to form a soft dough. Knead dough 5 minutes on floured board, adding a little more flour as necessary to prevent sticking. Place dough in oiled bowl, and let rise in a warm place for 1 to 1-1/4 hours.

Meanwhile, prepare filling: Heat butter in large, heavy skillet. Add garlic, onion, carrot and cabbage and cook over medium heat, covered, a few minutes until vegetables are tender. Remove from heat and cool. Blend in the cheese to distribute evenly, and stir in the meat and salt and other seasonings.

Punch down dough, let it rest a few minutes, then roll it on a lightly floured board to a thickness of about 1/8 inch. Cut out 20 4-inch circles. On each of 10 of the circles heap several tablespoons of the filling to within 1/2 inch of the edge of the dough. Dampen edges of the pastry. Cover with the remaining 10 dough circles and seal by pressing with the tines of a fork. Place on lightly greased baking sheet. Let rise

30 minutes. Bake in 425° oven about 12 minutes or until lightly browned. Yield 10 pasties

Naturally Delicious Desserts And Snacks
Faye Martin

APPLE BETTY

Don't get so carried away with nutritious meals that you forget dessert. Without a nice dessert from time to time, meals can get a little dull. Make this dish with a firm, tart cooking apple.

Filling:

- 10 cups pared, cored and sliced apples (10 to 12 apples)
- 3/4 cup apple or orange juice
- 1/2 cup dates
- 2/3 cup honey
- 3 tablespoons whole wheat pastry flour
- 1 teaspoon ground cinnamon

Topping:

- 1/2 cup quick-cooking rolled oats
- 1/2 cup whole wheat pastry flour
- 1/2 cup wheat germ
- 1 teaspoon nutmeg
- 1/2 cup sunflower seeds
- 4 tablespoons honey
- 4 tablespoons butter, melted

Combine the fruits, juice, honey, flour and spice in a large bowl and turn the mixture into a deep baking dish. In another bowl combine the oats, flour, wheat germ and seeds and mix thoroughly. Melt the butter and honey together and cut them into the dry ingredients with a pastry knife or fork until the mixture has a uniform texture. Spread the topping over the apple mixture. Bake at 350° for 45 to 50 minutes. Serves 8.

Honey & Spice: A Nutritional Guide to Natural Dessert Cookery
Lorena Laforest Bass

Use honey to enhance your favorite foods. And change those words to "It's good! And good for you!"



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Richard Taylor



Bee Talk

“Anyone can raise a few good queens. just pick out a strong colony with a good queen and read on.”

Beekeepers have been having a lot of trouble lately with commercially raised queens. The queens get superceded, or turn out to have poor brood patterns, or just plain don't do well. Not only have I heard this from a lot of sources – the members of our bee club, for example – but others are getting the same message, from all over. It can't be the fault of the queen breeders, many of whom have had decades to perfect their skills. I have been getting queens of the highest quality from the same place for over 20 years, but this last Spring I, too, had a lot of problems with them. It seemed to me that half the nucs I made up using these queens did not pan out. The nucs would go queenless, or sometimes there would be a queen but she wasn't laying eggs – that sort of thing. In the December issue of this magazine, Mark Winston devoted his entire piece to this problem.

What's going wrong? I don't think anyone knows, but one extremely knowledgeable bee expert has speculated that it might be due to all the stuff that has been going into beehives in recent years – fluvalinate, terra, menthol, and so on. There is also considerable evidence that queens raised in one locale often do not do well in a different one, even when the two environments seem similar. Thus, it is claimed, queens raised in the South are apt not to fare well in the North. Dr. Winston cited quite a bit of evidence for this, drawn from his own experience. That can't be true in

every case, however. The queens I got from my supplier in the South did just fine up here, until last year, and a friend of mine, an outstanding beekeeper, has, until the last year or two, had excellent results using Carniolans purchased from California, which has an environment totally different from this one.

In any case, there is clearly a need for beekeepers to be able to raise their own queens. That's fine for commercial beekeepers who might need hundreds or even thousands of new queens every year. It is well worth their time and trouble to raise their own queens, using all the specialized techniques of queen rearing – grafting and all that. They not only save a lot of money, but they are able to get the kind of queens they want.

But what about the backlotter, with maybe a dozen to 50 or even 150 hives? It is hardly worth it to this beekeeper to go to all the trouble associated with queen rearing, just to get maybe a dozen or so queens I'm one of those people. I have usually purchased 10 to 20 queens each Spring. Now if I am to raise my own, then I need a system that is commensurate with producing that small number.

And I've got such a system, which I'll now pass along. It is a very simple one, easy to grasp and put into action, and there is minimal risk of failure. I didn't invent it; I got it from a good friend, Mr. Duane Waid, one of the best beekeepers in these parts, who makes a substantial part of his livelihood from fewer

than 200 hives.

Here's how you do it.

Pick out a strong colony, one that not only has lots of bees – the stronger the better – but also has a history of being a good honey producer. Remove the queen. There's no need to destroy her. You can put her in a nuc, use her to start another colony, or return her to this one – whatever. Now separate the two stories of the hive with strips of wood all around, or better yet, with a frame; exact width of the strips is not important. The bees will immediately start queen cells, many of them along the bottom bars of the upper story. So the purpose of separating the two stories with strips of wood is to avoid damaging the queen cells along the bottoms of the frames. Without those strips, the cells are apt to be stuck to the top bars below, and come apart when the combs are removed.

Ten days later you remove the combs containing queen cells and put them in nuc boxes, one such comb per nuc. The remaining combs needed to fill the nuc boxes are obtained in the manner described below.

Some of the queen cells you get by the procedure just described will be at the bottoms of the comb and will, for the most part, be undamaged because of the space you created there by the strips of wood. Some of the combs will, of course, have more than one good queen cell. The extra queen cells can be carefully cut loose from the comb and attached to combs that have no cell.

The best way to do this is to cut an opening into the comb and carefully press the queen cells into it, *avoiding* pressure against the cell itself. Any "runt" cells, that is, small ones, should just be discarded.

Each of your nuc boxes now has one comb of brood and bees with one good queen cell. (It doesn't matter if the comb has more than one queen cell, except that it is a waste of queen cells.) Now you have to supply the remaining combs of brood and bees - two more combs per nuc, if you are using three-frame nuc boxes. You can just take these at random from various colonies in your apiary, bees and all, making sure you don't get any queens, but this is a very poor way to do it. You will end up with some very weak nucs, as many of the bees will just fly back to their hives, and there will be chilled brood as a result. The better way to get your additional brood combs and bees is as follows.

Gather the needed number of good combs, well-filled with brood, from various hives in your apiary, shaking and brushing most of the bees off, and replacing the combs with empty ones or frames of foundation. Put these combs into empty hive bodies, nine per hive body, and set them on top of strong colonies *over queen excluders*. Nurse bees from the comb below immediately start going up through the excluders and cover the brood. When the combs are covered with bees you can distribute them to the nucs as needed, and all the nucs will be of good strength. Very few bees will fly back to their hives, because they are nurse bees rather than older foraging bees, and for the same reason, there will be no fighting between bees taken from different colonies.

The job is now essentially done. Each nuc consists of a comb of brood and bees and a ripe queen cell from the original cell-building colony plus combs of brood and bees taken more or less at random from other colonies. At least one of these combs should also contain some honey and pollen. If they are short of honey you can supplement with sugar syrup. The nucs can be left in the apiary - on top of hives, for example - or moved to another location; it doesn't matter. In a couple of weeks eggs will begin to appear in the nucs, indicating that the queens are mated.

You can now use them to requeen existing colonies, by uniting the entire nuc to the colony to be requeened (after destroying the old queen) or, better, you can use the nucs to start brand-new colonies.

One last caveat: Only strong colonies should be used as cell builders, as indicated above. Weak colonies will raise queens if made queenless, and even a single-frame observation hive can requeen itself, but such queens are certain to be runts. To get good queens you need lots of nurse bees to supply the royal jelly.

This is certainly no way to produce queens in large numbers, but it is fine for the backlotter who just needs a dozen or so at a time. You get good, naturally raised queens at no cost, using only equipment that is already at hand. The only problem that can arise using this technique is that there may not be enough drones in the area to properly fertilize several queens especially early in the season. At 10 to 15 drones needed per queen, enough drones *may* not be present until a bit later in the season. **BC**

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

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Questions?

Swarm Cells - Why?

Last Spring I started two new colonies from packages using the medium-depth Illinois supers. By mid-June swarm cells were present in both. I made a split from one of them using a new queen, and by mid-August there were swarm cells again. Neither of the two original colonies was bubbling over with bees, and in fact there was still foundation to be drawn out in both. It is my understanding that colonies with young queens and adequate room will not swarm. Why were they making queen cells?

Dale E. Scheidler
Muncie, IN

This sound to me like another case of defective queens. The bees were not, I think, preparing to swarm, but were building cells to supercede the queens you gave them. See "Bee Talk" this issue.

Dead - Not Dead

Last Spring I installed two 3 lb. packages on drawn comb and sealed honey. By August one hive had an excess of dead bees on the bottomboard, and the top story was filled with honey, except for a single comb of brood. The other hive did not have an excess of dead bees and filled a super with honey. What is the explanation for this?

L.I. Boneman
Newark, NY

Certainly nosema may have played, a role here, but *Varroa* mites, pesticides, tracheal mites, some of the viruses and any combination of the above could have resulted in your situation. Closer examinations during the Summer would have given a clearer picture. With this amount of information it is difficult to say.

Surviving The Winter

A number of my hives got tipped and scattered over the hillside in Winter, when the temperatures ranged between 20°F and 40°F. We shook the bees into empty hives as best we could, supplying them with undamaged combs from the scattered hives, and then supplied each such hive with a second story full of honey. We were not able to separate out the queens, so some of the resulting colonies are queenless while others have more than one queen, the bees from different colonies having gotten mixed up together. Did we do this right? How long can queenless colonies survive in Winter?

John Scott Jr.
Princeton, WV

You seem to have had little choice if you wanted to keep the bees. I have known colonies to last through the Winter with no queens, and then, given a comb of young brood in the Spring, raise a new queen and be back to normal very soon.

At The Top

My bees are in two-story hives that have plenty of honey, but I added a third story on top that had been extracted, and the bees are now all clustered up in that third story, where there is no honey. Are they going to starve over the Winter?

Jeffery Mignot
Osceola Mills, PA

Colonies do sometimes starve over the Winter when the Winter cluster is not close to the honey, even when the honey supply is adequate. You could reverse the stories, getting the

honey up above the cluster, but the bees may not move up, so you would be no better off. My general rule in beekeeping is that when you do not know what to do, do nothing, and that is what I would do in this case. I think your bees might have a better chance of making it if you leave them alone. But I would reverse them as soon as possible in the Spring. A warm day in March wouldn't be too early.

New Queen

I understand that if bees go into Winter with a young queen, they are less likely to succumb to mites, so in August we divided a two-story colony, leaving eggs in both parts, thinking they would raise a new queen, but they did not. Was that because the time was wrong, or is there some other explanation?

Edward Reder
Bay City, MI

I have never heard that a colony headed by a young queen is more resistant to mites, nor can I see why that should be so. So long as there are eggs or very young larvae in a colony, the bees will always try to rear a new queen if they become queenless. However, they may have reared one and, because of the lateness of the season, she was unable to mate, or was poorly mated and inadequate.

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

Answers!

Richard Taylor

?Do You Know? Answers

1. **True** Honeydew is normally less sweet than honey since it contains lower levels of glucose and fructose than honey. The amount of honeydew collected will depend on the availability of nectar, which is generally preferred by bees.
2. **True** Beeswax is obtained as a secretion from wax glands of worker honey bees and results from the digestion of carbohydrates. Bees fed on either honey or sugar syrup can produce beeswax for long periods of time.
3. **False** A few species of bees besides honey bees produce wax. Bumble bees, orchid bees and several species of stingless bees produce small quantities of wax but adulterate it with plant resins or other materials to construct their brood cells and nest interiors.
4. **True** Honey in storage typically darkens in color. It has been shown that heat processing does not accelerate the latter darkening of honey. The rate in which honey darkens is related to the temperature while the honey is in storage.
5. **True** Honey, propolis and royal jelly all have antibiotic properties. The fatty acids in royal jelly, particularly 10-hydroxydecanoic acid are strongly antibacterial. The antimicrobial activity of propolis is well documented and several of its components have been demonstrated to be active. Honey possesses three biological properties which, either separately or in unison, account for its antibiotic nature. These are acidity, hyperosmotic property (readily absorb moisture from nearly any microscopic organism that enters honey) and the production of hydrogen peroxide by the glucose oxidase system when honey is diluted.
6. **True** Honey stored for long periods above 70=83 F. will be damaged just as it is with excessive heating. Storage of unheated honey at 50=83 to 70=83

- F is conducive to granulation and fermentation. Most deterioration of honey during storage can be prevented by maintaining storage temperatures below 50=83.
7. **False** The enzymes found in honey are almost totally added by the bee, though some traces of plant enzymes may be present.
 8. **False** Honey contains a small, nutritionally insignificant amount of several vitamins, including ascorbic acid, niacin, pantothenic acid, riboflavin and thiamine.
 9. **True** When honey is dried and burned, a small residue of ash remains, which is the mineral content. The mineral content of honey averages about 0.17% of its weight.
 10. **True** The sugars of stored honeydew are even more complex than those of honey, perhaps since two sets of enzymes, those of the hemipterous insect and of the honey bee, are involved in its production and storage.
 11. **True** The sugar composition of honey changes while it is in storage by the effects of bee enzymes and acids of honey. While in storage at ordinary temperatures (76=83 F.) about 9 percent of the simple sugars are con-

- verted into more complex forms, with twice as much glucose disappearing as fructose.
12. B) 5
 13. Aphids or plant lice
Scale insects
Leafhoppers
 14. F) Gluconic Acid
 15. G) Fructose (Levulose)
 16. H) Melezitose
 17. G) Fructose (Levulose)
 18. B) Potassium
 19. F) Royal Jelly
 20. E) Bee Venom
 21. C) Beeswax
 22. A) Propolis (Bee Glue)
 23. B) Honey
 24. D) Honeydew

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.

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Global News

FEBRUARY, 1998 • ALL THE NEWS THAT FITS

Illegal Imports From U.S. NZ POLLEN CO. RAIDED

Agricultural authorities raided a health product company in Christchurch after it was found to be importing bulk bee pollen from the United States under false labels.

The Ministry of Agriculture action was based on information provided by the National Beekeepers' Association.

New Zealand strictly controls the importation of bee products because of the danger of the accidental introduction of exotic diseases which could potentially devastate the local beekeeping industry.

The ministry executed a search warrant on the premises in the South Island city and intercepted bee pollen labeled as another product.

A spokesman said overseas inquiries will be undertaken by the ministry in relation to consignments involved in the incident. The pollen apparently originally came from China.

The ministry said the labels were allegedly changed by the exporter at the request of the New Zealand importer to avoid the regulations surrounding the importation of bee products.

"Under these regulations trade is permitted to occur only under closely-supervised conditions, which ensure the risk of importing bee diseases is kept to a minimum,

the ministry said.

New Zealand's Import Health Standard bans the sale of imported bulk pollen to the public. Pollen for human consumption can only be imported if it is to be processed into tablets or capsules under ministry supervision before sale. Other conditions, including testing for certain bacteria, may also be required.

"The flouting of these regulations poses a serious risk to the New Zealand beekeeping industry," the ministry said. "New Zealand is currently free of many of the major bee diseases which occur in other countries, most notably European foulbrood disease.

"If European foulbrood became established here, through bees eating imported pollen carrying the disease, beekeepers would have to treat their bees with antibiotics, which would see New Zealand lose its international competitive advantage as a country which does not use chemicals extensively in honey production.

All New Zealand imports of bulk bee pollen for human consumption were suspended when the investigation began.

The ministry is still deciding on what charges will be laid.

Alan Harman

AG CENSUS THIS YEAR

More than two million farms and ranches nationwide will receive a 1997 Census of Agriculture report form. Previous censuses of agriculture were conducted by the U.S. Bureau of the Census. Transfer of this census to USDA represents the consolidation of the entire Federal agricultural statistics program into

one agency. Now, there will one source for all important information on agriculture. Although there are many studies about large-scale farming, the census is unique because it is the only source of local county-level information about small, family farms. Completed report forms are due February, 1998.

Honey Market Affected? ASIAN ECONOMY SLOWDOWN

Southeast Asia's recent economic troubles could be the flashpoint for longer-term effects that could hurt U.S. farmers, said agricultural economist Carl Zulauf of Ohio State University.

"This is a serious situation of which any informed American needs to be aware and watch for possible future consequences," Zulauf said.

The extent of that seriousness will depend on whether the crisis in Thailand, Malaysia, the Philippines and Indonesia spreads to East Asian countries that are major importers of U.S. farm products, Zulauf said. The latter are South Korea, Japan and China.

Symptoms of Southeast Asia's troubles festered throughout 1997 with currency devaluations ranging from 13 percent to 34 percent in the above four countries. The value of South Korea's currency, the won, has also declined by 20 percent. Currency devaluations make U.S. farm products more expensive overseas, which could cut into trade.

Zulauf said the crisis is not just a change in currency values, but is a barometer of deeper, structural problems in Asia's long-touted "miracle" economies.

"Problems in economic activity always come from some place you didn't expect it," Zulauf said. "There was once unmitigated optimism in the Southeast Asian region."

The underlying troubles can be traced to the past decade when foreign investors optimistically poured money into Southeast Asia in anticipation of their future potential. The infusion of capital pushed growth rates into the upper-single digits and lower-double digits, and some economists heralded the region as an emerging "tiger"

economy.

The intense investment activity overheated Southeast Asian economies, and by last summer, investors had lost faith in national currencies. This led to devaluations and stock market crashes through the latter half of 1997.

In addition, Japanese banks are exposed due to massive loans to the region. Add to that Japan's large debt problem left over from its economic boom of the 1980s.

"Americans still perceive Japan as an economic miracle," Zulauf said. "However, its economy has not performed well during the 1990s, and its government has not made the structural reforms that many experts say is needed."

Asia's economic problems stem from excess manufacturing capacity, Zulauf said. The region is producing more goods than the world market can absorb. When too few dollars chase too many goods, the result is deflation, or a drop in prices. Hence these countries have seen deflated prices for their manufactured goods.

"CEOs of major companies have been asking, 'What happens if this excess capacity comes on the market, and the demand isn't there to absorb it?'" Zulauf said.

The underlying economic problems may eventually hit Asians' pocketbooks by cutting into income growth and maybe even reducing their incomes. Consequently, their demand for foreign goods — including U.S. farm products — is expected to decline.

Zulauf said Asia's "rational response" to the economic conditions would be to "export their way" out of the excess manufacturing capacity. They would sell their products at reduced prices to U.S. consum-

Continued on Next Page

CALENDAR AVAILABLE

The NC State Beekeepers Association is continuing its well established tradition of publishing an annual beekeeping calendar and a limited number of the 1998 calendars are available to non-NCSBA members.

The calendar is made to be a wall hanging calendar and measures 17 inches by 11 inches when opened. There is ample space on the calendar to record all of your relevant information such as important dates for birthdays, anniversaries, and bee meetings.

The NCSBA produces the calendar as a service to its members and

each one receives a free calendar. There are a limited number of extra calendars which may be purchased for \$6. each (includes shipping and handling). However, as a special offer you may join the NCSBA and pay 1998 dues of \$15. and receive a 1998 calendar by return mail and a 1999 calendar when they are published in December of 1998. This offer is only available for new memberships in the NCSBA and you must reference the notice in this journal.

Send checks to NC State Beekeepers Association, 1403 Varsity Drive, Raleigh, NC 27606.

ASIAN ... Cont. From Pg. 49

ers, and U.S. producers would be forced to lower their prices.

In the short term, a round of deflation would benefit consumers with lower prices, Zulauf said. However, deflation potentially hits company profits and lowers stock prices.

Asia's economic problems would hurt U.S. farmers, who have greatly increased their exports to the region in this decade. For example, 32 percent of U.S. corn exports go to China and Japan; another 30 percent go elsewhere to Southeast and East Asian countries.

In addition, more than 40% of U.S. soybean exports and more than 50 percent of beef and pork exports ended up there as of 1996.

Zulauf said the above economic scenario is not for certain, and he hopes it does not happen. "I would place a 10 percent to 20 percent probability on a significant impact on U.S. agriculture.

"These odds may not seem high, but normally the odds of a significant positive or negative event are much lower than this."

What should farmers read into Zulauf's scenario, which may or may not happen, or else may occur in some modified form? "My advice to farmers is to stay on top of the situation by collecting information and to get your costs of production in order."

It would take at least six months before any serious indicators appear, Zulauf said. U.S. agriculture could be hurt whether or not the most serious aspects occur because of its vulnerability to overseas developments.

"Farmers need to ask the question: 'How can I cut production costs, yet retain or enhance profitability?'" Zulauf said. "Remember, the farmers who survive in the long run have the lowest cost of production."

Chalkbrood The Culprit

AUSTRALIA ALLOWS HONEY IMPORTS

The Australian government has ended quarantine requirements for chalkbrood disease from honey and other bee products entering Australia allowing honey to be imported into all states except Western Australia without a permit.

Chalkbrood was first identified in Queensland in December 1992. Attempts by the Queensland Department of Primary Industries to contain the disease were ended when surveillance identified diseased larvae in a large number of apiaries in southern Queensland.

Chalkbrood initially caused severe production losses in Australia - often greater than 20% - but because bees develop some genetic resistance to the disease production losses now stand at about 10%.

Australia's beekeepers are highly mobile, moving bees hundreds and even thousands of kilometers to take advantage of seasonal nectar flows. This may have been one factor in the spread of chalkbrood to all states except Western Australia.

Quarantine requirements on imported honey and products that contain more than one percent

honey by weight formerly required heat treatment for two hours at 70° Celsius to ensure viable spores of the chalkbrood fungus were killed.

However, earlier this year, the Australian Quarantine Inspection Service, the Federal Council of Australian Apiarists Associations, state chief veterinary officers agreed that quarantine requirements for chalkbrood were no longer necessary for imported honey due to the widespread nature of the disease.

Western Australia has state legislation to protect its favorable bee health status and is justified under World Trade Organization Sanitary Phytosanitary Agreement rules in retaining quarantine requirements for chalkbrood.

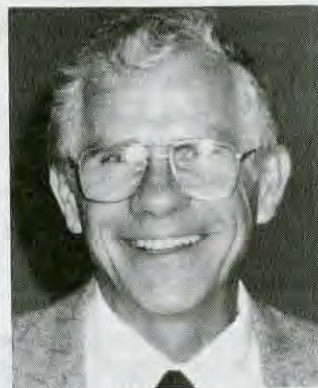
The state continues to require that honey, either imported or produced elsewhere in Australia, must undergo heat treatment before being shipped to Western Australia.

In all other states honey does not have to be heat treated or tested for chalkbrood, but consignments will still be subject to random inspection for contamination.

- Alan Harman

HOOPINGARNER'S REWARD

Dr. Roger Hoopingarner was given a Life Membership in the Ontario Beekeepers' Association in recognition of his work done on bees, pollination and nectar plants and particularly his recommendation that hives be placed in groups of 15 colonies in orchards. This has saved beekeepers who were placing colonies single or double throughout the orchards a lot of work and grief.



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“What is so rare as a day in June?” My grandmother quoted this poem in her diaries on those perfect early Summer days of high pressure, low humidity, light breezes and a deep blue sky.

They don't look that rare when you read through 70 years of diaries, but they are rare enough when staring out an office window at the azure sky and puffy cotton clouds. The sun will be sinking when you emerge pale and tired from the artificial light.

Rare days in June make good swarming days. A busy Spring kept me from checking hives, and the bees planned their escape behind my back. One day my wife, Nancy, phoned me from the house. “Your bees are up to something. They are buzzing around the porch and flying into a hole in the house. I'm afraid they're moving in and I don't dare open the door.” I wandered across the road. A dozen bees explored a half-inch diameter hole by the front door, apparently looking for a new home. Somewhere in my little apiary a hive was about to swarm. It was probably too late to prevent that swarm. But it was a glorious afternoon for quitting early and inspecting the beehives. Maybe I could catch the queen before they emerged and make two or three splits. To discourage them from moving into the house, I caulked the hole, then fired up the smoker.

There is one honeysuckle bush in my apiary where almost every swarm settles before leaving. I checked there first, then circled the rest of the apiary. There were no swarms visible, and the activity at the hives seemed normal. I rooted through all the hives. There was no suspicious activity in any of them, but as I opened the last hive I heard a familiar roaring sound at the honeysuckle 30 feet away. A half-dozen times I had passed that bush that afternoon. I felt the familiar awe, excitement and loss as the swirling cloud lifted into the air and drifted southwest.

They always seem to go southwest from here. Last year a broken leg kept me out of the beeyard in the Spring. One swarm headed southwest as I stared helplessly from a wheelchair. A second swarm followed a couple weeks later. I hobbled after it on crutches, losing them as I stumbled in the undergrowth. Losing another swarm reminded me how I have marked time by swarms I've caught and lost.

My dad took me to see my first swarm. That big, omnipotent guy walked right up to those bees, and by golly, I walked right up with him. That swarm looked to me to be about the size of a beach ball. Dad tried to catch those bees, but they had other plans. Later we bought a package, and I helped nail the hive together. I still use one of those supers, the one with the handle on the inside.

I was a young teenager riding my bike down the dirt road to my grandparents' house when I accidentally rode into a flying swarm. The sky suddenly darkened, and the air hummed. I slammed on the brakes and skidded to a stop in the center of a swirling cloud of bees. As I watched, they settled on a nearby apple tree. I returned with an empty hive and shook them in, the first swarm I captured myself. The landowner later hired me to exterminate a hornet nest in his yard.

The first flower of true love blossomed on a rare day in June. Nancy and I leisurely canoed down a stretch of the Genesee River, drifting past doe and fawn drinking in the morning mist beside giant elephant ferns. We plucked and ate locust blossoms overhanging the water. As we hove in sight of Nancy's car at the bridge, she seemed flustered and blurted, “I left my car keys in your truck.” Looking back on the three hour hike to our starting point is now a pleasant memory that Nancy doesn't like to talk about. Halfway back we saw a swarm spread out on the ground. There were no hives nearby, or I would guess the queen had her wings clipped. There was no easy way of capturing the swarm so I regretfully left it.

I lay peacefully in the hammock, graduated from college, unem-

ployed. There was the familiar roaring as the swarm passed overhead. I followed them as fast as I could run until they disappeared. Since then I had assumed an airborne swarm always flew too fast to follow.

Now as my son and I watched this latest swarm taking wing, we followed it across the road and through the underbrush that had stopped me the year before. We could hear the buzzing just above the trees. We jogged up the hill through the woods to the next road where we could look up and see the speckled cloud still drifting southwest. They ought to settle somewhere soon to rest. Gary and I decided to continue following just in case. The land was posted, but there was no time to ask permission.

Over the road, down the bank and into the swarm we slogged through ankle-deep mud and up the far bank. Ahead, halfway across the broad clover field, we saw the swarm, now just above the ground, moving about as fast as we could run. At the far edge of the field they flew up over the trees, and we broke through a tangled hedge into a pine woods. Two hundred yards into the woods the swarm descended below the treetops. We stopped at a steep gully. Partway down was a giant, gnarled, white pine full of woodpecker holes 20 feet up and bees by the thousands flying in and out of all the holes. “Well Gary, that's that. It would be easier to buy a package of bees than to get that swarm back. Some fathers take their sons to football games. We chase swarms.” Gary still wore the adult bee suit with trouser legs unrolled and trailing behind. I still carried the useless gloves and forgotten hive tool in one hand.

The setting sun cast long shadows in front of us as we trudged home. This was a rare day in June.

Thinking of June

Peter Sieling

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