GLEANINGS IN BEE CULTURE APRIL '89

WEBSTER'S HIVES

"A Beekeeper's Dictionary"

A

Alarm Odor — A security system that stinks

Alfalfa Pollinators — The 'hay' team

Alighting Board — Buzz stop

Alighting "Bored" — End of a dull flight

Apiarist's Jargon — Buzz words

B

Bee Space — Important consideration in hive construction since all bees are six-footers

Beehive — A place with more sisters than a convent

Beekeeper — "Super" man or woman

Beekeeping Permit — Hiver's license

Blooming idiots — Flowers that don't appeal to bees

Brood Nest — Larva-tory

Brood Rearing (German bees) — Kinderguardin'

Bumble Bee — Buzzin' cousin of the honey bee

Burr comb — Hair-grooming used by Perry Mason star

C

Capturing A Swarm — Flee Circus

Continued on Page 224

INSI

- AHB Upda
- First Inspec
- 1989: Who's Who In Apiculture

Excluder — A device to keep the queen eggs-actly where you want her
Extracting Honey — Centrifugal chores
Extractor — Super scooper

F

Fanning — The way bees dry their tiers
Feeding — Putting a colony in a brood mood
Field Bees — Girl scouts
Flower Sifting — The first step in making bee bread
Foraging — Taking a scentimental journey
Foulbrewed — Description of a terrible tasting cup of coffee
Frame — Cellblock
Frames — Wax racks
Frizz Bees — Ones that never go near a comb

G

Gentle Brushing — Comfortable shoes
Gold Rush — Bees trying to get to the suburban dandelion crop before the lawn care specialists do

APRIL '89 CONTENTS

(ISSN 0017-114X) Vol. 117, No. 4
116 Years Continuous Publication by the Same Organization

Features

Articles

Columns

Departments

NEXT MONTH

MAY . . . the month of flowers from all those April showers. But there is seldom time to take this month — the beekeeping year is in full swing.

There is much to do in May, and much to read in next month's issue.

First, The Annual Honey Report. A summary and analysis of honey prices over the past year. We'll analyze prices by region, over time and by product. From easy to read graphs, the information gained will guide your selling (and buying) policies for next year.

Then a great piece that has been lots of fun to put together called *From a Bee's-Eye View*. This is certainly a different way of looking at the world, and we know you'll enjoy this perspective.

But there's lots more. More Southeast Exposure; More Beauty & the Bees; More Commercial How-To's. Lots of all of the above!

And, don't forget our regulars, with their wit and wisdom, and an occasional shot at the establishment!

All coming your way — in *Gleanings*, in May.

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THE INNER COVER

SPRING TONIC

Three years ago this month I traded my coveralls (covered-with familiar farm stuff) for a distinctly sedate desk job. The advantages are numerous, but the disadvantages are nearly equal in number. Let me explain.

Previous to my office incarceration I spent over ten years doing real work for a living. You know, lifting and pushing, grunting and groaning, sweating and hurting — real work. That was the only way to learn the things I wanted to know. You don't learn to move hay or plow fields by reading about it. Nor do you speak with experience about crop yield, unless you lift and move the yield in boxes or crates or supers — lifting and pushing, grunting and groaning. And learning.

Be that as it may, ten years of hard work develop certain internal metabolic, and external nutritional habits that are not easily changed. I went from burning 2500-3000 calories a day, and eating enough to replace that, to burning only 800-1000 calories daily, but still eating as much as before. Elementary physics points out that if you put more in than you use, you put on weight. Oh yes, you definitely expand.

I bring this up as background to a recent activity I've been involved in that I'd like to share.

While my waistline has been slowly expanding for three years, my attention to the outside world has decreased proportionally. Attention to my new job, and the demands of duty have required more time and energy than I ever thought possible, and something had to give.

But enough! This spring I cast off the dress-for-success shackles and got back outside. I started by simply taking walks after work (by late Feb. it's light enough at 5:30 to see where you're going). I saw things I haven't seen in years — skunk cabbage and willows in bloom; robins in love; the first glint of creek water through winter ice; maple buds swelling huge with hope and pollen. All these before the bees are really moving, but they are moving, and it's mostly up — so part of this has involved feeding bees.

I haven't noticed much in waistline reduction yet, but I feel better, sleep better, and the fresh air and exercise have pushed some of the desk dust out of my brain.

I have been outside during these past three years certainly, but always for a project oriented activity — gardening, mowing the lawn, moving bees. But my 'spring tonic' has been definitely non-goal oriented.

There's much to be said for nothing to do.

•

CLUB MED

We've devoted a lot of pages in this issue to our annual Who's Who in Apiculture, and for what we feel is a very good reason. Where else can you go and actually have somebody understand what you mean by 'queenlessness'? Why, only at your local bee club, of course!

I can't emphasize how important NOT being isolated is. Belonging to an association isn't just paying dues and listening to business meetings. It is more, much more. Even the worst run, poorly organized club is better than always feeling isolated — being alone, not having anybody to turn to when you need somebody to turn to.

I urge you to join your local club. They can use the funds, and the extra pair of hands on occasion — and you can certainly use the company.

We all can. It's nice to know you're not alone.

Continued on Page 234

COVER . April is the hectic month, and laughter is the tranquilizer.

APRIL Honey Report

April 1, 1989

These figures represent current prices from our contributors. They are based on reports from many states and averaged for each region. Where insufficient information is received, no price is shown.

Wholesale Extracted	Reporting Regions								Summary		
Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.											
Containers Exchanged	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**R**	**A**	**L**
60 lbs. (per can) White	45.00	39.31	40.00	30.00	47.35	35.33	39.56	38.10	24.00-50.00	38.78	38.95
60 lbs. (per can) Amber	42.50	34.88	36.00	22.20	47.50	32.17	36.00	35.00	22.20-47.50	35.51	35.82
55 gal. drum/lb. White	.50	.35	.42	.40	.49	.61	.55	.53	.35-.60	.51	.51
55 gal. drum/lb. Amber	.49	.31	.38	.37	.46	.55	.50	.47	.31-.60	.47	.46
Case lots — Wholesale											
1 lb. jar (case of 24)	28.55	27.21	23.14	24.45	26.85	24.00	27.50	29.94	20.40-29.60	26.20	26.01
2 lb. jar (case of 12)	27.15	25.75	25.79	21.58	24.07	26.00	24.99	28.63	20.40-33.00	25.78	23.37
5 lb. jar (case of 6)	30.45	25.92	23.00	25.23	26.00	26.50	26.81	25.80	23.00-30.90	26.49	25.83
Retail Honey Prices											
1/2 lb.	.93	1.02	.78	1.18	1.01	.86	.96	.91	.79-1.50	.97	.96
12 oz. Squeeze Bottle	1.50	1.53	1.19	1.27	1.35	1.07	1.27	1.37	1.00-1.89	1.34	1.33
1 lb.	1.55	1.59	1.29	1.75	1.47	1.52	1.56	1.66	1.29-2.00	1.58	1.65
2 lb.	2.82	2.83	—	3.43	2.39	2.56	2.95	2.25	2.19-4.00	2.79	2.78
2-1/2 lb.	3.50	4.02	3.33	—	2.91	3.20	—	2.50	2.50-4.85	3.39	3.77
3 lb.	4.22	4.05	3.49	3.45	3.45	3.79	3.75	3.72	3.45-4.30	3.82	3.79
4 lb.	5.50	4.83	—	4.75	4.59	4.46	4.95	—	4.25-5.50	4.73	4.62
5 lb.	6.73	5.36	5.49	6.50	6.00	5.50	5.69	6.17	4.79-7.00	5.87	5.72
1 lb. Creamed	2.00	1.48	1.35	1.59	1.59	1.60	1.80	1.49	1.35-2.00	1.65	1.62
1 lb. Comb	2.67	2.05	3.00	2.25	2.07	1.90	2.09	3.63	1.80-5.00	2.46	2.16
Round Plastic Comb	2.00	2.50	2.00	1.85	1.75	1.67	—	1.69	1.69-2.50	1.90	1.93
Beeswax (Light)	1.20	1.08	1.00	1.05	1.45	.86	1.01	1.17	.85-1.25	1.10	1.02
Beeswax (Dark)	1.05	.97	.95	.95	1.00	.80	.95	1.05	.81-1.20	.96	.93
Pollination (Avg/Col)	31.25	—	—	26.25	—	19.50	—	29.25	19.00-32.50	26.56	24.80

Honey Report *Features*

Summary Column: There are 3 parts. **R** — Range of *all* prices reported for the month, lowest and highest. **A** — Average price for each commodity across all regions. **L** — Average price of each commodity listed *last* month.

Comments Section. Price Index — A descriptive statistic that takes into consideration *all* commodity prices, and compares each region to the others. The region with 1.00 has the highest overall prices for the month. A region with Price Index .90 has prices, overall, at 90% those of the region with 1.00.

Region 1.

Price Index 1.00. Prices and sales steady with little change expected until warmer weather arrives. Warm weather has stirred the bees and feeding may be needed before major flows start next month.

Region 2.

Price Index .89. Sales steady with prices similar to last month. Mild winter has allowed cleansing flights, but increased feeding. KY reports flooding in some parts. Spring flows appear normal to a bit late, so watch for starvation.

Region 3.

Price Index .82. Prices down, sales slowing. Business steady but not brisk. Metropolitan areas strong, but low priced. Bees appear in good shape for most of region.

Region 4.

Price Index .73. Sales slowing for season with respective down trend in prices. Winter has treated the region well for the most part, allowing several cleansing flights but not so mild that starvation will be widespread. Dry in IL yet, looking for spring rains.

Region 5.

Price Index .97. Sales strong and prices holding well, a good sign for this time of year. Mil winter and some moisture have helped the bees.

Region 6.

Price Index .83. Sales average for this time of year, with prices up just a bit. Mild winter generally in region, spring flows on target. Fire ants, the perennial pest, continue to plague colonies.

Region 7.

Price Index .83. Sales strong in area, even increasing. Prices steady to decreasing just a bit. Overall, market excellent. Warm spells helped cleansing flights, along with appropriate moisture in most areas. Feeding low, looking for first flows.

Region 8.

Price Index .87. Prices down just a bit but sales steady to increasing a bit. Cold spell in north slowed things a bit but moisture welcome. South still dry and cold, too. Pollination well underway, mites a problem with no good solution in sight.

Anyone interested in becoming a "Honey Reporter" should contact the Editor.

MAILBOX

Florida, et al.

The recent announcement published concerning Florida beekeepers contributing to Dr. H.G. Hall's research at the University of Florida appears to have been misunderstood. Although the majority of the funding came from FL beekeepers, persons from other states (especially GA) donated as well. All funds were collected by the FL State Beekeepers Association, however, to turn over to Dr. Hall as a contribution from that body.

The Association in no way wishes to minimize the contributions of beekeepers from other states. We look forward to continuing to work with beekeepers all across the nation on a solution to the Africanized bee problem.

Frank Randall, President
FL State Beekeepers Ass'n

Bee Space Neglected

I am a new beekeeper. I understand the 3/8" bee space is very important. But I have found that the bee space is not being held between all boxes on some new equipment.

Some deep bodies are 9-5/8", and the frames are 9-1/8", leaving 1/2" space. Some shallow supers and frames leave 5/16", and some medium supers and frames leave 3/8" space. I trust you see the confusion.

With increased space between the tops of the frames and the top of the hive a great deal of burr comb will be built up. This past year I had to recut my equipment to conform to the bee space.

It is obvious that some manufacturers are not paying close enough attention to this fact, and that not all equipment is interchangeable.

Stanley Sample
Groveland, MA

Missed Stitch

If we "owe a debt to those with vision", as you assert in the Jan. Inner Cover, it seems that credit for their efforts would be small repayment.

Who did the Shears-n-snip (Sherensnitza)? All that glitters is not silver.

Eric Brunn
Thorndike, ME

Ed. Note: Doris Payne, 214 Plymouth Rd. Fairfax, Wilmington, DE 19803 was responsible for the beauty that graced our Jan. Cover.

Buzzin' Again

The William H. Miner Agricultural Research Institute will once again make available the "Let's Buzz the Schools" booklet. This program, originated by Claudia Linkous, a North Carolina grade teacher and John Ambrose, a Professor at NC State, along with the Southern States Beekeeping Federation was adopted and reviewed by the Miner Institute.

The program is excellent for grades K-5. If you do school demonstrations or know of someone who would benefit from this booklet, a copy may be obtained by writing to Loretta Surprenant, Miner Institute, Chazy, NY, 12921. Thanks.

Loretta Surprenant

Continued on Page 199

MAILBOX

Starting Right!

I have just finished reading *The New Starting Right With Bees*. It is the first book that any beginning beekeeper should purchase. I would certainly recommend it to any beginner.

The publishers are to be congratulated on the revision of this book.

Don Cox
Lima, OH

Honey Holidays . . .

Recently, the National Honey Board developed a honey of a holiday promotion planner kit for food service operators. The kit, which includes a planning guide, art slicks and stickers, shows food service operators how to improve sales using honey during holidays such as Valentine's Day, St. Patrick's Day, Thanksgiving, Christmas, and more.

These art slicks are excellent for use in any organization's newsletter. You are welcome to use the art clippings

Continued on Page 201

First Encounter

© Teresa Crone

I recall quite vividly
My first encounter with the bee
as she made honey from our lawn,
A dandelion perched upon.

So dainty she was upon her feet
Laboring for her favorite sweet.
I offered her one tiny finger,
She crawled aboard, content to linger,
And all about her that I knew
Seemed, right then, to be untrue.

I'd been warned that she could sting;
Now, clearly, she did no such thing!
A new affection rose in me —
How dear that tiny honey bee!

With loving hand I stroked her back,
And then I learned another fact:
If she should light upon you, let her,
But, for goodness sake, don't pet her.

MAILBOX

to decorate your publication. When using the artwork, we would appreciate it if you could add a credit line: Artwork compliments of the National Honey board.

Please let us know if we can provide further information to you about the National Honey Board's programs, and please remember to send copies of your publication to the National Honey Board office. We love to hear what your organization is doing.

Barbara Smith
National Honey Board
421 21st Street #203
Longmont CO 80501

Terrific Taylor!

It is hard to imagine anyone involved with bees or beekeeping during the last twenty years having not heard of Dr. Richard Taylor and his column Bee Talk in *Gleanings In Bee Culture.* In the unlikely event someone has not, and certainly for new beekeepers, *The Best Of Bee Talk* by Dr. Taylor will reveal what readers have known for many years, that he writes entertainingly and with wisdom and wit.

The Best Of Bee Talk is a timely collection of portions of Dr. Taylor's columns which have been published by *Gleanings* over the past two decades. Dr. Taylor's many readers will find in this recently released book, nostalgic reminders of halcyon days when beekeeping was a universally popular hobby.

This 148 page hardcover book is a modest collection of a series by an author who combines practical beekeeping instruction with a liberal sprinkling of philanthropy we may all heed.

Larry Goltz
Gleanings Editor (retired)
3020 Harlan Drive
Redding, CA 96003

Guest Editorial . . .

GENE KILLION

I remember going to Federation conventions as a teenager with my father. The apiary inspectors (AIA) would meet for an hour or so in one of the Inspector's hotel rooms and visit. We accomplished little in information exchange. Rather it was more of a social get-together. Today the annual meeting of Apiary Inspectors of America is a four-day event. We even have one day set aside for workshops where USDA personnel teach laboratory techniques and update us on new information pertaining to bee diseases and pests.

Let me tell you a few things about the apiary inspection program in Illinois. Although it can still be improved, we have a very good one. We have worked for it through the years. When I say "we" I mean both the Illinois Department of Agriculture and the Illinois State Beekeepers Association. It was not handed to us on a silver platter. As the popular saying goes "we did it the old fashioned way, we earned it".

Whether a person has one colony or several thousand, each beekeeper is accorded the same service. Our local associations have grown from three to twenty over the years. Registration and apiary inspection are free.

How do we accomplish these things, since we are the smallest state regulatory agency in the Illinois Department of Agriculture? Because we know where the money comes from, and who to see, and how to get a little of it for the apiary inspection program. It isn't easy! Besides the general public, you have to educate the right people about honey bees' value to mankind, and then, after every election, re-educate the old ones again and also all the new officers. You have to have visibility in the halls of your state legislature, all the way up to the Congress of the United States. Contacts on a personal basis are better than a thousand letters. Why do you think elected officers in the major beekeeping associations make frequent trips to Washington? To get exposure and help for the beekeeping industry. One thing is for sure, we'll certainly get exposure when the Africanized honey bee arrives.

There are many ways State Beekeeping Associations can and should, get involved in their state legislatures. Remember, some of those same legislators will one day go to Washington and work in some higher capacity. For instance, Illinois Senators Paul Simon and Alan Dixon, as well as Governor James Thompson have taken gifts of Illinois honey when visiting foreign countries.

"A State Inspection Program is as good as the association in that state wants to make it."

We must have laws and regulations that allow the movement of bee colonies, packages, and queens for pollination, honey, and beeswax production. These must be rules and regulations we can all live with, and everyone can abide by. After all, we the beekeepers made these laws in each state a long time ago, and over the years have amended them to cope with new pests. If the laws in your state aren't fair or adequate, then I challenge each of you to get them changed rather than sit and gripe and do nothing.

State Associations, extension agencies and researchers who work in apiculture must support, and can influence the decision making process of apiary inspection programs. If there are inadequate funds or personnel in your state, then get off your backsides and do something about it. Don't write to the bee journals or newspapers and complain that regulators are hurting the bee industry more than the diseases and pests. Often not a single one of these complainers has ever been to their State Capitol to attend a budget hearing in support of their states' bee inspection program.

Differences of opinion are healthy, but do something. I believe there isn't a single state official in the United States who doesn't know someone who keeps honey bees. With the mites and Africanized bee problems facing us today, there is no better time in history to get funding for apiary inspection programs. Now is the critical time to get this done, as all of Agriculture could be affected.

Don't blame your chief apiary inspector for the predicament your inspection program is in if he or she doesn't have the personnel or budget to operate the program. However, if they have adequate resources, and are sitting on their behinds doing little, then get someone else to run the show. A state program is as good as the association in that state wants to make it. We have good programs in a few states but we need a good one in *every* state to maintain a viable beekeeping industry.

I hope I have not offended anyone by my words, but as Howard Cosell used to say "Tell it like it is" The Apiary Inspectors of America need your help. They cannot do it alone.Δ

Gene Killion recently retired as Chief Apiary Inspector for Illinois. These remarks are taken from a speech he gave at the American Beekeeping Federation meeting in January.

RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

"Smoking Allowed"

Varroa mites, which have now been found in 18 states and are probably in many more, are very difficult to detect. While many methods of detecting and controlling these dreaded mites have been developed in Europe, we have only one chemical officially approved for both detection and control in the U.S.

However, conversations I have had with persons in the EPA in late January indicate that it is legal to use tobacco smoke, in a bee smoker, to detect these mites. Tobacco smoke has been used for varroa detection in Europe for a number of years. It is not legal, nor is it practical because of the biology of the mite, to use tobacco smoke to control the mites. It must be remembered that tobacco smoke can be harmful to human health.

One method of detecting varroa mites without any chemical or smoke is to place a piece of paper, covered with 8-mesh hardware cloth, on the bottomboard of a colony. The purpose of the hardware cloth, which should be separated above the paper about an eighth of an inch with sticks, is to prevent the bees from removing the debris and at the same time, any dead mites. The method is most effective if the paper is large enough to cover the entire bottomboard.

The paper is left in place for one or two weeks and then the debris that collects is examined for mites. One method is to place the debris in 70 percent alcohol and the mites will, at least in most instances, float to the top. Not everyone has had success floating mites in this way and the method works only if the mites are dry. Alternatively, one searches visually for the mites. Paper with a sticky surface may be purchased and this aids in the collection of live mites. One may also cover a piece of paper with a light coating of oil or grease to entrap the mites. The paper method may be used at any time of the year but fall is thought to be most effective.

The process of detecting mites is speeded up by applying tobacco smoke immediately after the paper is in place. The information I give here is taken from the pamphlet cited below. I have talked to one of the authors at length about the process but have not used the tobacco smoke method as yet myself. However, it has been used in Europe for several years and beekeepers there have enthusiasm for the method.

Ordinary pipe tobacco will work. In conversation I have been told that any tobacco will work but I am also aware that the nicotine content of tobacco varies greatly. The tobacco that is grown for the purpose of making insecticides has, I understand, three times as much nicotine as does ordinary smoking and chewing tobacco. The dose per colony is three grams which is about a heaping tablespoonful. Too much tobacco smoke may kill bees. However, I have seen articles from Europe that indicate that some beekeepers have been routinely using waste tobacco as smoker fuel for a number of years.

The tobacco smoke method works best when the temperature is above 50°F. The pamphlet advises treating the colony in the evening after the bees have stopped flying. A piece of paper is placed on the bottom board. One piece of newspaper is placed in the smoker and lit. After most of the paper has been burned the tobacco is placed on top of what paper is left. the lid of the smoker is closed and the bellows worked until smoke is produced from the burning tobacco. The smoke is blown into the entrance. All of the tobacco will be burned in two to three minutes. The colony entrance is closed with crumpled newspaper, which is removed the following morning. At this time the paper on the bottomboard is examined.

Eugene Killion, Supervisor of Apiary Inspection for IL (recently retired) used the tobacco detection technique for varroa in his state last fall. In a letter to APHIS last November he wrote about the IL survey for varroa mites as follows.

"We found that we could find varroa within five minutes by using a tablespoonful (2 oz.) of tobacco in the smoker." While talking to him he was very enthusiastic about the method and indicated it was certainly one of the easiest to use.

It is important that we do not use chemicals in honey bee colonies unless they are really needed. There is no point in treating a colony for any disease unless it is present. For this reason *detection* is important. Learning how to detect varroa is now as important for the beekeeper to learn as is any other aspect of beekeeping. Beekeepers must learn how to detect and treat their colonies for varroa or the bees will die.

We are aware that Africanized bees in Brazil are resistant to varroa mites. However, we do not know how this resistance works. It was reported that some bees in eastern Europe were resistant to varroa but I understand the strain was lost. Today, I am not aware that anyone has any European honey bees that are resistant to the disease though obviously we are all on the outlook for resistance.

We are aware that honey bees are naturally resistant to a number of diseases and that because of their variability we can expect resistant bees to arise somewhere.Δ

Cook, V.A. and D.A. Griffiths. *Varroasis of bees: tobacco smoke detection.* Ministry of Agriculture, Fisheries and Food (Great Britain) Pamphlet 936. 2 pages. 1985 *(This information was reprinted, with descriptive photos, in the Aug, 1986* ***Gleanings,*** *Vol 114, No. 8)*

Honey Bee Pheromones

STEVE TABER of Honey Bee Genetics

P. O. Box 1672 • Vacaville, CA 95688

"There's much ado about the smell here."

Pheromone is a relatively new word in the English language. It doesn't appear in my 1979 *Unabridged Webster's Dictionary,* but it has been in use for over 20 years. It was coined to describe animal and insect behaviors caused by a chemical or chemicals. For example, if you have observed a female dog or cat in estrus (heat), you have also noticed that neighborhood males change their behavior.

Most pheromones that have been identified have to do with attracting the opposite sex for courtship and mating. However, some pheromones are defensive in nature, like the odor of a skunk, or that of many bugs that release offensive smells when squashed or eaten by predators. Of course an eaten bug is long dead, but in the future that particular predator will probably not be interested in eating one of that species of bug again.

Pheromones have recently aroused the interest of many bee biologists. There are apparently many different pheromones used by honey bees, and they seem to control behavior absolutely. This means bees have no choice as to how they will behave when exposed. If you are particularly interested, two papers have been published that cover this subject in detail. One is in *Bee World,* with 120 references, and the other in the *Journal Of Chemical Ecology,* with 35 references.

The first pheromone discovered, and it's corresponding behavior described is what you see when bees from a swarm enter a hive. They expose the tips of their abdomens and fan their wings. They put their heads in the same direction and proceed to march into their new abode. When thousands of bees do this simultaneously the odor can be readily detected. It is released from the scent gland, or more correctly, the Nassanoff gland.

Prof. Karl von Frish postulated that this gland is also used to mark a foraging location. In my opinion this may be so when thinking of dishes of sugar water, or when bees are robbing combs of honey. I do not think bees use these glands when foraging on flowers.

The Nassanoff gland produces at least seven components which have been identified: geranial, (Z)-citral, (E)-citral, geranic acid, nerolic acid, geraniol and (E,E)-farnesol. Presently, a commercially produced mixture of these compounds is being used as a swarm attractant. The compound is placed in empty boxes or containers, and is used as a lure for swarms. From reports I have read it seems to work well, and is offered for sale from various outlets which advertise is the journals, including this one.

The UDSA is using this material in thousands of bait boxes in Mexico to help slow the northward march of the Africanized honey bee (AHB). USDA personnel south of the border have already trapped thousands of swarms in these baited boxes.

Beekeepers know that when stung the first time, you are likely to get a second or third sting very near to the first site because of the sting odor or pheromone left behind. Often called alarm pheromone, when guard bees detect this odor they become more alert, and may attack and sting any close predator. This in turn releases more alarm pheromone, increasing the concentration of the chemical in the area, giving rise to more stinging behavior.

Years ago, men learned that using smoke would neutralize this behavior, making beekeeping an enjoyable enterprise. To date, there have been 19 compounds identified with the sting, not including the venom itself.

There are also pheromones produced in the queen's head, and others produced in a worker's head. The queen also produces a sex attractant which is a combination of at least 13 compounds. Workers, meanwhile, produce at least five compounds associated with royal jelly, an interesting compound in itself. And, just to keep you on your toes, so to speak, bees' toes (tarsi) produce an ethanol soluble substance described as a swarming inhibitor.

Years ago I noticed that the odor of fecal material from virgin queens was strong, sweet smelling, and distinctly different from the feces of either workers or drones. I suspected that it was loaded with chemical substances having some pheromonal activity. I got my

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good friend, M.S. Blum, to smell this material once, and he instantly agreed.

Eventually, Robert Page, a bee geneticist, became interested in, and began studying this amazing product. Now, one of the more bizarre things I do when I go to a bee meeting is to take along a small vial of soluble queen feces, courtesy Dr. Page, for beekeepers to smell. The odor is much like that of fresh grapes.

Twenty six years ago I was visiting my friend, F. Ruttner, in Austria. He was working on delineating the area where drones congregate, waiting for a queen to appear so they would have a chance to mate. Some years earlier these drone congregation areas had been described by N. Gary at Cornell University. He found they remained constant year after year, and that drones from all nearby hives would find these places immediately. There were perhaps four or five within flight range of the Cornell apiary. But it was on my trip to Austria that I first saw the dramatic effect of this first-hand.

Ruttner's assistant fastened a virgin queen to a string which was tied to a helium-filled balloon. The assistant would walk a zig-zag course, five meters to the right, then five to the left. When he went right, hundreds of drones would appear, but when he went left they would all vanish. In this way Ruttner mapped the exact location of this drone congregation area. It covered about five acres of land and was almost the same shape every year. What a puzzle. Do a few drones, old fellows that have done a lot of bar hopping, automatically know where to go? Then, do they secrete a male pheromone that attracts other younger drones, and the virgin queen too?

You'll just have to tune in a few years from now to find out how it all works out.Δ

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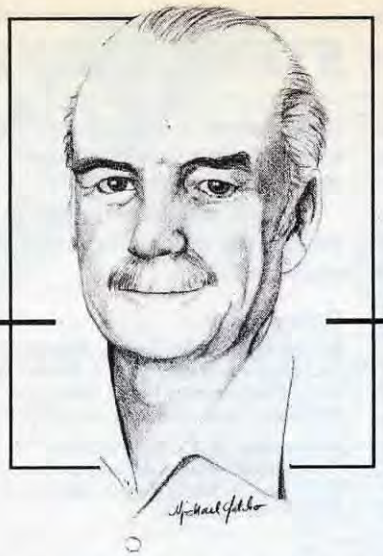

THE BEE SPECIALIST

ELBERT R. JAYCOX

5775 Jornada Road North • Las Cruces, NM 88001

"Catalogs can be entertaining, but when buying equipment, be careful."

I have always been fascinated by beekeeping equipment. I like to make it and work with it, and that may be at least part of the reason why I got into beekeeping and stayed there.

When you are just getting started, it is tough to decide just what equipment to buy and what to avoid. Also, should you buy an expensive piece of equipment or is there some inexpensive substitute? Sources of information are the bee magazines, newsletters, and association meetings that provide details about what to buy when you are starting with bees. The most recent one in *Bee Culture* was in the February, 1989, issue in an article by Sammataro and Flottum.

This month, let's consider some of the things in the new bee supply catalogs, and some of the things that aren't there. We'll also go off on a few tangents to bring in other ideas that may be useful to you in relation to beekeeping equipment.

All supply companies carry protective equipment for beekeepers, including gloves, hats, veils, coveralls, and things like bands or leggings to close off the gaps. But not all have the same items. For example, there are gloves available in cloth, plastic- and vinyl-coated cloth, cowhide, and pigskin. What to buy? I have always used short leather gloves, of light color, together with muslin gauntlets. If I were buying gloves now, I would probably buy the plastic-coated ones even though they may be pretty warm to wear. These smooth gloves are preferred where bees are defensive because they do not hold stings and bee alarm odor as much as other gloves do. However, I wore my usual gloves when working with African bees in Panama and had no problems. Only one sting penetrated the leather in a period of two weeks.

Coveralls come in several fabrics including pure cotton, cotton-polyester, and ripstop nylon. Many beekeepers believe there is safety within a thick coverall — and the thicker the better. I prefer taking more risk of being stung through my clothing than to die from the heat. I wore ripstop nylon coveralls in Panama and did not wear extra clothing beneath them. No stings. However, USDA people have said they needed more than that when working in Venezuela. If so, I would wear some of that Scandinavian large-mesh underwear, along with ordinary clothing, underneath a pair of *breathable* ripstop nylon coveralls. This fabric is not sealed and allows air to pass through.

Black veils are a liability when working with defensive bees, yet we need the dark color for good visibility through the veil. Bee supply companies should think about making veils that are white on the outside and black on the inside. Or you can make a white nylon net veil with a black front panel or insert though which you can see well. I prefer a nylon net veil worn with a western-style straw hat to keep the veil away from my head.

The word "standard" can lead you into problems when choosing bee equipment. One catalog says "U.S. standard shallow supers" are the thing to use. Other catalogs show a slightly different depth for the same supers and don't call them standard. According to another catalog, a smoker measuring 3 1/4" X 7" is a "standard" smoker and the more common 4" X 7" is a jumbo. The real jumbo is 4" X 10", and the only thing standard about the small one is its ability to go out when you need it. Don't buy less than the 4" X 7" model.

Queen excluders are an essential part of beekeeping as far as I can see. They work best, and are most needed, where the nectar flows are slow and drawn out. None of the bee supply companies have any excluders to match the rest of their equipment! In American bee hives, there is a bee space at the top of the frames of each hive body. There is little or no space beneath the frames. To match this pattern, our excluders need a bee space (5/16" or 3/8") above them, and no space below them. Woodbound excluders provide a space on both sides, and steel-bound ones have no space on either side. Not surprising, then, that the bees stick them in place and build burr comb on them. If you use excluders, buy steel, plastic, or zinc ones and add a bee-space rim around one side. Place the rim upward when adding the excluder to a hive.

Most of the supply companies now sell welded honey tanks. Before buying any metal equipment for holding honey, however, make sure it does not contain lead solder. The acid of the honey can cause lead to be dissolved into the honey. The threat of lead contamination is greater in old, used tanks. Be sure to find out what holds the metal together in any processing equipment you by.

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• ELBERT JAYCOX • THE BEE SPECIALIST •

Bee supply companies must respond to the demands of their customers. Why else would they sell queen and drone traps, which should have been outlawed years ago? Worse yet, one of the catalogs says "Place (the trap) in front of the hive at the start of the honey flow to prevent swarming." Such a trap will damage a colony in many ways, causing problems including the loss of the queen. Steer clear of such equipment. You would do well also to forego the use of "slatted racks" and other equipment designed and advocated by people who persist in giving bees human attributes and needs. One of the funniest and most interesting talks I ever heard at the meetings of CA beekeepers was devoted to telling how to use a plastic fertilizer sack and a rock or dirt clod in place of a bottom board. If bees weren't so versatile and well adapted, they'd all be dead as a result of some of our management and fancy equipment.

There are some new items in the supply catalogs that you should have; others may need additional testing under a wide range of conditions. A steel smoker box is now available with a hinged cover and a latch. If you carry a smoker in your vehicle without dumping it each time, buy such a box or devise something like it. I know beekeepers and bee inspectors who have lost trucks and cars to fires started by smokers. In Illinois, I had a steel box beneath the truck bed for the smokers. With the door hinged at the top, the box protected the truck even if the door was not secured and a smoker flared up while in transit. A 5-gallon steel can with a snug metal lid can do the same thing for a smoker carried in a car or truck.

Other new items include "halfcomb honey cassettes." These are used to produce comb honey with only one layer of cells rather than the usual two. Plastic boxes with preformed comb foundation inside make it easy to prepare a super for the bees' use. Before using such equipment, however, beekeepers should have some experience in bee management, since colonies may need some special handling and evaluation for best results.

Drone foundation is available so you can put a sheet into each colony as an aid in finding Varroa mites, which prefer drone brood, and for creating more drones of European stock for that day when the African bees arrive. Even people just getting started with bees are well advised to put a drone comb into each hive and to monitor it for the presence of mites within the sealed cells of drone brood.

The bee supply catalogs don't offe a couple of items we need. There are no bee waterers of any kind, yet all apiaries need a nearby source of water. There are also no devices for trapping and holding queens so that anyone can find a queen and remove her from the colony. And no one offers jumbo equipment any more, with hive bodies 11-5/8 inches deep. It lost out to migratory beekeeping (too heavy) and standardization. Yet, for in-place beekeeping, the jumbo and modified-Dadant hives have much to recommend them. The Reyes family in Cordoba, Mexico likes them better than the regular Langstroth hive and they operate both types. If I were starting in beekeeping, however, I would use only hive bodies 6-5/8 inches deep, often called "Dadant depth." One catalog still says that this very popular size is an " odd-sized super used by a few beekeepers."

Bee supply catalogs can be entertaining reading.Δ

Taking Honey

DR. JAMES TEW

The Agricultural Technical Institute • Wooster, OH 44691

"Plan for this annual event."

No matter how well you may have cared for your colonies, honey bees do not enthusiastically give up their honey crop. Many beekeepers have developed specific techniques for 'robbing' bees — some more complicated than others. Removing the crop as quickly as possible has several justifications. (1) It prevents bees from walking across white wax cappings, darkening them with pollen and propolis residues. (2) Some honeys crystallize quickly. Getting such honey from the combs before crystallization occurs will save a lot of grief later, during extraction. (3) If multiple flows are a characteristic of a particular apiary site, prompt removal of the first honey crop will prevent mixing with the second crop, and make double use of the equipment.

Techniques used to remove the crop vary from one beekeeper's operation to another, but the ultimate consideration is 'how many colonies must be worked'

Low Technology . . .

Brushing Bees From Combs

If you're removing honey from only a few colonies (or frames), bees may simply be brushed from the combs with a stiff bristle brush. These can be purchased from bee supply operations. Alternatively, snow brushes or other household brushes work well. Brushing bees from frames is time consuming and may cause the bees to become defensive. Smoking the colony while gently brushing bees from the comb will make the task proceed more smoothly; however, this technique is time consuming and is not practical on a large scale.

Bees Escapes and Escape Boards

The bee escape, a simple entrance restricting device that lets bees out of supers, but will not allow them to re-enter, has been used for many years. The bee escape fits in the hand hold of an inner cover. The combination of these two pieces of equipment (the bee escape and the inner cover) forms an appliance commonly called the escape board. The escape board is placed *beneath* the supers but *above* the brood nest. The board works best on cool nights when the bees in supers move through the bee escape into the brood nest. The winter entrance that some inner covers have must be closed when the inner cover is used as an escape board.

In recent years, various plans

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High Technology . . .

Chemical Repellents

Commercial beekeepers have known for many years that certain chemicals would repel bees from supers. However, concerns about safe use and possible residue contamination have prevented some compounds from being approved for use or have required that their use be discontinued. Currently, two chemicals are approved for beekeeping use in the U.S.

Benzaldehyde (oil of almonds) works well in the 65-80° range. Benzaldehyde, when exposed to air, oxidizes quickly to form benzoic acid.

Another chemical, butyric anhydride, is commercially available under the trade name "Bee Go" This material works at a higher temperature (8(100°F) than benzaldehyde, but works in a similar way.

High Technology . . . Continued

The repellents are sprinkled on absorbent material fastened to the inside of an inner cover, which are then called fume boards. Depending on weather conditions, the chemical is sprinkled on the pads, placed on top of the colonies and left there for a few minutes. In some parts of the U.S., the backs (tops) of fume boards are painted black to aid the vaporization process. Pads should stay in place only long enough to move most of the bees out of the super. Puffing smoke into the colony first will help the repellent begin to work. Rarely would more than 2 tablespoons of chemical be required per pad to start the process. Pads should be recharged when bees no longer respond. The chemical impregnated pads should not be left on the colonies any longer than necessary, and repellents should never be allowed to come in contact with honey. If bees begin to come out around the pad or out the front of the colony, too much repellent has been used or the pads have been left on too long. The beekeeper would be well advised to apply too little material rather than too much.

Low Volume Forced Air (Bee Blowers)

Low pressure, high volume forced air is a popular removal technique used by many beekeepers — especially commercial beekeepers. Blower units are available commercially that are designed for beekeeping purposes. Also, many home designed models exist that are quite functional. The blowers are efficient in that one trip to the apiary is all that is required. The procedure is fast and works well if used under ideal conditions. When combs are not capped, bees that are engorging on honey are difficult to blow from supers. Further, beekeepers removing honey during a dearth with a blower may find that robbing is a problem. The odor of honey blown across the apiary entices bees into the area. The noise of the gasoline engines can be annoying, but conversely, the cooling breeze of the blowers can be a blessing on hot days.

While most blowers are reasonably portable and can be hand carried, one unique model is quite large. The concept of this blower is to produce enough air from a large gasoline engine driven propellor that several colonies can be worked at once. Moving air from the large blower prohibits most of the flying bees from returning (upwind) to the colony. A small hand-held unit is used to blow the bees from supers. The larger unit requires two people for unloading and requires frequent movement. Additionally, bees are sucked onto the screen that surrounds the back side of the blade, but are released unharmed after the blower is shut down.

However, there are several positive attributes to be considered. The unit does a nice job of keeping most of the bees blown away and down, in addition to offering a cooler place to work on hot days. A distinctive attribute of the big blower is that it offers a "safe space" in which beekeepers can drink water, remove bees from one's veil or just cool off without having to move some distance from the colonies being manipulated.

No single procedure for removing bees from supers is perfect. In fact, a combination of the procedures discussed will probably offer the best results. Even so, expect a few bees to still be in the supers regardless of the techniques used.Δ

Low Technology . . . Continued

for custom made escape boards have been published in the beekeeping literature. One model that is particularly effective uses small, plastic, funnel-shaped cones which have an open tip. Exiting bees leave through the base of the small cone and do not readily find the tip opening when attempting to re-enter the supers. If this type of escape board is left on during a flow, bees will construct burr comb in/around the funnels.

The advantages of the escape board concept are: (1) bees are not excessively aggravated, and (2) since the beekeeper is not exposed to the bee colony population, the entire super removal process moves rather quietly. However, there are some problems that prevent the bee escape board from being the ideal solution to super removal. In order to allow bees time to exit supers, the escape board requires another trip to the apiary a day or so later. If a beekeeper is managing many colonies or the yard is at a distance, this requirement can be inconvenient at best. Further, supers must be in good condition or robbing bees from nearby colonies may be encouraged in supers that cannot be defended by the excluded bees.

Another consideration is that bees will not readily leave any brood that may be contained in the supers. Occasionally, a bee escape will become clogged, preventing bees from exiting.Δ

HOME HARMONY

ANN HARMAN
6511 Griffith Road • Laytonsville, MD 20879

Onions — where would cooking be without them. And where would the onion be without the honey bee? Although most home gardeners plant onion sets, the seed for those sets has to come from somewhere. Onion blossoms are indeed visited by several kinds of insects, but the honey bee is the prime pollinating insect, although the bee is not very enthusiastic about onions.

Seed catalogs, known for mouth-watering photographs and superlative language, would never put an onion on the cover. Tomatoes, beans and corn merit tempting names. But the onion has to be content with words like "big" and "yellow" — not very exciting.

Although we think of onions as having a strong flavor, onions do range from very mild and sweet to a strong, snappy flavor. No matter which type you may be using at the moment, onions need to be treated delicately. Overcooking is the worst offense. Onions will retaliate by developing a disagreeable odor and taste, as well as becoming discolored.

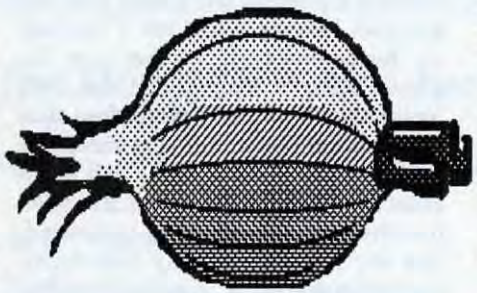
In the kitchen, onions are usually added to something else. Quarter an onion and add it to the soup or stew; chop it and add it to the meatloaf; slice it and add it to the salad. When do onions get to be recognized alone as the delicious vegetable they really are?

Scalloped Onions Hunters Style

12 medium white onions
1/2 tsp. honey
1/2 tsp. salt
4 slices bacon, diced
1/2 cup flour
4 cups milk
1/2 tsp. salt
pepper to taste
1/4 tsp. onion salt

Peel onions and soak in salted cold water to cover. Drain. Cover with hot water, add honey and 1/2 teaspoon salt and simmer 20 minutes. Drain and place in greased casserole dish. Cooked diced bacon. Remove bacon from pan and add, to pan, 1/2 cup flour. Blend well. Add milk and seasonings and cook over medium heat until smooth and creamy. Add bacon. Pour over onions. Cover top with buttered bread crumbs. Bake in 350° oven for 45 minutes. Yields 6 servings.

Nebraska's Honey Cookbook
Nebraska State Honey Producers Association



Pre-cooking onions in a microwave is an excellent way to prevent overcooking. Microwave cookbooks give cooking times for whole onions. These times can be shortened to give you the degree of pre-cooking you desire. For example, in the previous recipe, instead of simmering the onions for 20 minutes, microwave them for about half the microwave cookbook time.

We are accustomed to using hollowed-out tomatoes, green peppers and acorn squash as "vegetable cups" to hold a mixture of vegetables or salad. Onions make perfect "vegetable cups"! Steam or microwave medium large onions until done. Remove the inside, chop up and use in the stuffing mixture, and stuff with meat or vegetables. Green peas are particularly delicious served in onion shells.

Although onions and honey seem an improbable combination, they really are a good team. We think of glazed carrots and glazed sweet potatoes as a

Continued on Next Page

good use for honey, but you should try glazed onions.

Glazed Onions (I)

1 pound pearl onions, peeled
2 Tbls. butter or margarine
1 Tbls. honey
1/2 tsp. cornstarch
1/4 tsp. dry mustard
OR 1/8 tsp. turmeric
1 Tbls. cider vinegar

Steam or microwave onions until just tender. Drain and reserve 1 cup liquid. Combine remaining ingredients with the liquid, stirring and mixing well. Cook until slightly thickened. Add onions and stir gently until heated and covered with glaze.

Honey Recipes
North Carolina State Beekeepers Association

Glazed Onions (II)

8 medium onions
3 Tbls. butter
1/4 cup honey

Steam or microwave onions until just tender. Drain thoroughly and let stand until dry. Melt butter in skillet, then add honey. When well blended, add onions and cook slowly, stirring gently, until browned and nicely glazed. Do not let glaze or onions burn.

Favorite Honey Recipes
Honey Queen Committee of California

So often onions are added to tomato dishes. Here is where tomatoes (catsup, really) get added to an onion dish.

Onions In a Casserole

3 cups small pearl onions
1/3 cup honey
1/2 cup catsup
1-1/2 Tbls. butter or margarine
salt to taste

Pre-cook onions by steaming or microwaving. Drain well and put in greased baking dish. In a small saucepan, mix honey, catsup, and butter and pour over onions. Cover and bake about an hour in 350° oven, basting occasionally. Uncover for last 15 to 20 minutes if too juicy. Serves 6.
Variation: omit catsup and add a little sherry and slivered almonds.

Cooking With Honey
Judy Powers

This onion casserole recipe lends itself to nice variations, in addition to the sherry and almonds mentioned. I have used plain tomato sauce and added my own seasonings of oregano and marjoram with a dash of Worcestershire sauce. You can also add a tomato cut into small chunks. You will probably think of some other delicious possibilities.

This next recipe is actually one of my favorites. If you have never tried this combination, you will probably react the way my friend did when I gave her the recipe some years ago. She telephoned me to ask for a very different salad recipe — as I remember it was to impress a possible boy friend with her gourmet cooking. I told her I had just the recipe and read it to her over the phone. After a long pause she said, "onions and oranges?? What does that combination taste like?" I assured her that the salad was delicious and was a great success with my guests. She tried it and it was the success I had promised. The boy friend eventually fizzled out, but for some other reasons, not the salad.

Orange and Onion Salad

Skinned orange sections
OR peeled, sliced oranges
OR pink/yellow grapefruit sections
OR canned mandarin oranges
OR any combination of above
Thin slices of Bermuda onion

Arrange fruit and onion slices on lettuce leaves on individual plates. Pitted black olives can be added as garnish if desired.

Celery Seed Dressing

1/2 cup honey
1 tsp. dry mustard
1 tsp. salt
1 to 2 tsp. celery seed
1 cup vegetable oil
1/3 cup vinegar

Combine dry ingredients in blender. Add vinegar. Gradually add oil while blending. If this recipe is used for other fruit salads, 1 tablespoon grated onion can be added. Yield about 2 cups.

Joy of Cooking
Irma S. Rombauer

Our cooking of today certainly benefits from two of man's oldest foods — honey and onions. Onions, along with lentils, were a staple food of the early Egyptians. Honey was man's first sweetener. Make good use of both today.Δ

Ann Harman Comes to Medina

Ann Harman will be in Medina, OH on April 22nd and 23rd at The A. I. Root Company's brand new retail experience West Liberty Commons, located on West Liberty St.

Ann will be giving two 'Cooking with Honey' demonstrations on Saturday, one at 12:00 noon and another at 3:00 p.m. with a third demonstration Sunday at 1:00 p.m.

General categories include *Barbecuing with Honey, Oriental Cooking with Honey,* and *Baking with Honey.*

Don't miss this first-ever opportunity to be entertained by (and learn from) Ann Harman.

Remember, April 22nd and 23rd, 1989 — Saturday at 12 and 3, and Sunday at 1.

Don't miss it!

UNDER WATER BEES

JOHN F. SEETS, JR.

As I climbed into my scuba gear, I knew my visit to the Sea View Apiary, located in the warm waters of the Caribbean would be anything but ordinary. The honey bee hybrid, *Apis aqueous,* has recently been developed in secret by gene manipulation at the Beltsville Bee Lab in MD, and I had been invited to visit. The Sea View Apiary was designed to study the capability of this new species to utilize a salt water environment. Initial reports indicated the bees were flourishing much better than had been anticipated.

Chomping down on my regulator and holding my mask in place, I rolled off the side of the boat. Following the marker line down towards the apiary, I began looking for Mike Nelson, caretaker of Sea View.

The water was warm and a beautiful blue, with visibility about 200 feet. Noticing the surrounding coral reefs, I couldn't help but feel I was living a Jacque Cousteau Special. The bouy line ended at a house size pressure dome. I eased myself into the air lock, closed the outer door and hit the cycle lever replacing water with air.

Mike was waiting when I entered. Pouring us both a glass of coral jucice, he commented on the wisdom of my Association for splurging to send me here for a first hand look at Sea View. I couldn't help but agree. So, without further ado we suited up and exited an air lock on the other side of the dome.

The apiary was situated in a canyon, with reefs on either side extending to the surface, forming an atoll. After taking in the general terrain, the first thing to catch my eye was what looked like thousands of tiny strings of pearls, everywhere. I asked Mike about them (our headgear was equiped with voice actuated transceivers). To answer, he pointed above me. I looked up and saw hundreds of these pearl strings coming towards my exhaled air bubbles. As they got closer I could make out bees at the beginning of each tiny pearl string. They entered and exited my bubbles rapidly. The tiny pearls I saw were tiny bubbles exhaled by the bees!

Mike said that these bees still needed oxygen. Like landlubber bees foraging for water, foragers here were responsible for obtaining oxygen any place they could find it. These places included reef air pockets, plants or animals, or even the surface. These bees store air in two air sacs, one in the thorax, the other in the abdomen. When full, these bees are two and a half times their regular size. Exhalation is accomplished through the spiracles (tracheal mites are no problem here).

I reached toward a bee, but before I could reach it, Mike knocked my hand down. I looked at him in amazement.

"John, you don't want to do that. You don't have your rubber gloves on. The venom in these bees is very, very toxic, and will paralyze large fish This was a necessary development since they must survive against the many predators which live here."

Better stung pride than stung hand, I thought. After pulling on my gloves, I reached up and cupped one of the bubble bees. She had a cute little diving bell that was almost transparent and the antennae poked though into the water. Mike said the bees made the bell out of wax and hardened it with calcium carbonate, a by-product of the reef. The wings and proboscis were larger than *mellifera's,* and the hind legs were larger too, but flatter for rudder purposes.

Then we descended to the apiary. The hives, about 20 of them were actually small hillocks of varying heights. They were made of the same material as the surrounding rock — limestone. I would have missed them altogether except for the bubble strings at the entrances.

As we neared one I saw bees entering and exiting through a small tunnel at the base of the front. Around one side was a fairly large depression which extended under the hive's outer wall. Mike pulled a small air cylinder out of his pouch and extended the connecting hose up under the wall as far as it would go. He released air until bubbles started escaping from the depression. Motioning me to follow, we entered the depression and came up inside the wall in an air pocket. Hanging a light on a hook, Mike unlatched a metal plate in front of us and placed it aside.

Here were the bees, frames, combs and all. It looked like a normal hive in there. I heard little hissing sounds — bubble bees releasing their air load. There were several queen cells on the frames we inspected. They were studded with little pearls. I asked Mike about the cells and he said that the bees were preparing to school.

"School?" I said, thinking I had not heard him correctly.

"Yes, bees don't swarm here, they issue in schools", he said.

The honey in the frame had a turquoise tint to it, so I asked how *Apis aqueous* got their honey. Mike related the following —

"The coral polyps which make up 99% of the reef's living organisms feed on microscopic algae and plankton. At certain times during the day these polyps extend in formations, very much resembling flowers. During the extension phase pores in the polyps open allowing the bee's elongated tongue

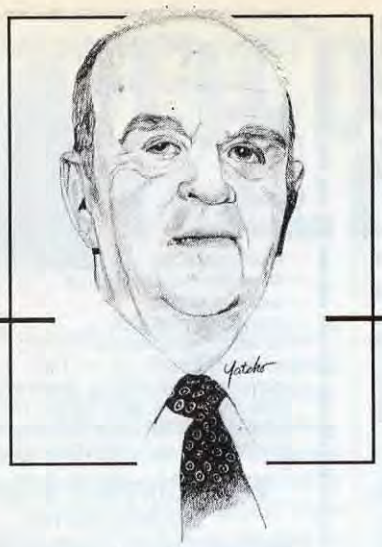
Continued on Next Page

WATER BEES . ***Cont. from page 220***

access to the sucrose and glucose produced by the polyp's system. The polyps produce, and live, in the reef's skeleton, made of calcium carbonate.

Resealing the hive, we looked over parts of the reef, watching the bees at work, but our air supply was dwindling so we returned to the dome. I was able to sample some of this exotic honey — it was good, very good. It had a taste somewhat akin to lobster, with just a tad of butter. It didn't need any salt.

I was able to bring some of the honey back with me, and if you're interested, simply call me, anytime, at 1-555-275-3665 (look it up).Δ



KOOVER'S KORNER

CHARLES KOOVER

1434 Punahou St. #709• Honolulu, Hawaii 96822

"What size brood chamber?"

Is a double brood chamber necessary? With the use of proper equipment, absolutely not. By proper equipment I mean a 10 frame Langstroth brood chamber filled with nine good brood combs and two follower boards. Placed on a Killion bottom board, the brood chamber is all brood nest and not a combination brood nest and hangout for idle foragers. By foragers is meant the old bees which have served their apprenticeship within the hive and now serve the remaining part of their lives as field bees. With the rack under the brood chamber they have a place of their own where they cluster when idle at night or during inclement weather. This also prevents congestion in the brood nest and reduces the tendency to swarm.

Give the bees a place to store incoming nectar, preferably a shallow super with drawn combs should be placed over a queen excluder, as soon as needed. This prevents clogging the brood chamber with honey. We now have what Edward Lloyd Sechrist used to call a clear brood nest.

The authors of *ABC & XYZ of Bee Culture* state that a good brood comb contains about 132 inches of comb space and approximately 6500 worker cells. Under ideal conditions the nine combs in the 10 frame Langstroth brood chamber could then contain 1188 inches of comb space with 58500 worker cells.

A queen can lay according to W. J. Noland and Dr. J. H. Merrill, both authorities on the subject, about 1500 eggs a day and at maximum laying, not more than 1800 eggs in a 24 hour period. Considering that a queen would lay 1500 eggs a day for 23 days, this would fill 34,500 cells with eggs and brood. After the 23rd day brood would begin to hatch and those cells would become available again.

Old style slatted rack.

So at best, of the 58,500 perfect worker cells available, a good queen would use only 34,500 cells while laying at top speed. This would leave 24,000 cells unused for brood rearing. In actual practice, that many cells may be taken up by honey and pollen, drone brood and imperfections, like the long slot between the lower part of the combs and the bottom bars. However, this slot does not exist in a brood chamber which is placed on a bottom board with a Killion rack. The four inch wide front part of the rack prevents this loss of comb space.

For years I followed the standard practice of using double brood chambers on standard bottom boards but when I switched over to the Killion bottom boards and follower boards, I discovered that I not only could dis-

My hives with single brood chambers.

pense with the second brood chamber but that my surplus honey crops were about double what they were before. How to explain that is subject to all sorts of conjecture. The fact is that now I am getting 200 pound averages in a good year. The location of my hives is a good one, but that alone would not account for about three times the average for our State (CA). It has been said, that "figures don't lie but liars do figure"

This article should set some of our beekeepers to thinking. Why haul double stacked hives around, when single brood chamber hives will do just as well for pollination or migratory beekeeping? Why hunt queens in 20 combs when she only needs to be in a nine comb brood nest? Why all this lifting off of upper brood chambers, creating disturbance to the hive population which takes them many hours if not days to overcome? What about older beekeepers and youngsters, who have no business lifting deep supers full of brood and honey? Beekeeping is a wonderful vocation or avocation, if one will keep an open mind.Δ

JOHN DROMEY

Presents

WEBSTER'S HIVES

A Compendium of Buzz-Words

A

Alarm Odor — A security system that stinks
Alfalfa Pollinators — The hay team
Alighting Board — Buzz stop
Alighting "Bored" — End of a dull flight
Apiarist's Jargon — Buzz words

B

B-Keepers — People who use their VCR to tape old movies
Bee — Clover rover
Bee Average — A worker
Bee Minus — A drone
Bee Plus — A queen
Bee Space — An important consideration in hive construction, since all bees are six-footers
Beehive — A place with more sisters than a convent
Beekeeper — "Super" man or woman
Beekeeping Permit — Hiver's license
Blooming idiots — Flowers that don't appeal to bees
Boxing Promoter — A hive salesman
Brood Nest — Larva-tory
Brood Rearing (by German bees) — Kinderguardin'
Bumble Bee — Buzzin' cousin of the honey bee
Bunny Comb — The kind that's found in frames placed on rabbets
Burr comb — Hair-grooming device used by the star of Perry Mason

C

Capturing A Swarm — Flee Circus
Cell (When used by bees for napping) — Chamber of snorers
Cleansing Flight — High drops
Cold Feat — Wintering bees
Colony (Without drones) — Shehive
Courting A Queen — Romancing the flown

D

Dance Of Flowers — The phlox trot
Deep Super — An apartment manager who lives in the basement
Division Board Feeders — Lick-wood nourishment
Drone — Son of a bee
Drone Cell Cap — Son bonnet
Drone Trap — He keeper

E

Earth — Planet of the Apis
Excluder — A device to keep the queen eggs-actly where you want her
Extracting Honey — Centrifugal chores
Extractor — Super scooper

F

Fanning — The way bees dry their tiers
Feeding — Putting a colony in a brood mood
Field Bees — Girl scouts
Flower Sifting — The first step in making bee bread
Foraging — Taking a scentimental journey
Foulbrewed — Description of a terrible tasting cup of coffee
Frame — Cellblock
Frames — Wax racks
Frizz Bees — Ones that never go near a comb

G

Gentle Brushing — Comfortable shoos
Gold Rush — Bees trying to get to the suburban dandelion crop before the lawn care specialists do
Golden Retriever — A honey extractor
Guard Bees — Door belles; Vigil aunties

H

Halfway Successful — a three-point landing
Hawaiian Bee — Pollenesian
He-Bee Jeebies — Fear experienced by someone who doesn't realize the drone has no stinger
Hex Appeal — Why worker bees are attracted to comb foundation
Hive — Comb home
Hive Tool — Pries winner
Hive Tulle — A bee veil
Honey — The golden drool
Honey Bottler — Jar tender
Honey Cell Cap — Gooed housekeeping seal of approval

I

Increase In Brood — Babe-bee boom
Inspectors — Buzz fuzz
Italian Bee Swarm — Roamin' legion

J

Jelly Role — It's the crown "drools" that turns a common larva into a queen

K

Killer Bees — Hivin' the terrible

L

Legal Hives — Ones with "registered" nurse bees
Leg Work — Filling pollen baskets
Lip Code — Standards for grading honey by flavor

M

Money Comb — Commercial chunk honey
Mumble Bee — One that has "two left feet" when it comes to dancing, instead of the usual three

N

Naturally-Mated Queens — Highbreds
Nectar — A bee's sac lunch; Forage porridge
Non-Honey Plants — Sweet nothings
Non-Stinging Bees — Drones and frisbees
Not-So-Hot — An uncapping knife that "sticks" to the job

O

Odor Heeders — Guard bees on scent-ry duty
Open Frame — Disappointing result for bowlers . . . and beekeepers

P

Play Flight — An audience swarming out of the theater during intermission
Pollen (Gathered by foot) — Sole food
Pollen Pellet — Foot ball
Pollen-Laden Tail-Wagging — Dirty dancing
Pollination Of Cash Crops — Agribuzziness
Propolis — Trouble gum
Propolis (Used as a sealer) — 'Tween excluder

Q

Queen — Brood mayor
Queen Candy — Cagin' cuisine
Queen Cell Wall — Royal pane
Queen Cells — Funny comb

R

Raw Deal — Buying green honey
Round Dance — "Turn" signals
Royal Jelly — Queening fluid
Royal Telly — The queen's antennae

S

Scout — Bee on the lookout; Petal detector
Severe Winter — Cluster's last stand
Show-Me State Bees — Mo-lasses
Smoker Fuel — Puff Stuff
Social Insect — Chum bug
Solar-Extracted Wax — Tancakes
Sting — Bee bop
Sting Operation — Smoker failure
Stinger — Bee hind
Stings — Bees' whacks
Supersedure — Reign storm
Surplus Honey — The beekeeper's haul of frame
Surplus-Honey-Filled super — Bar-bee cue
Swarm — Flee hive
Swarm (From the Caucuses) — Rushin' bees
Swarming — The crate escape

T

Tap Dance — Directions to a dripping water faucet
Temporary Divider — Chewspaper
Thirtysomething — Approximate weight of a super
Transporting Pollen — Hairy carry
Travel Stain — Varnish tarnish
Trivial pursuit — Deciding what "bait" to use in a pollen trap

U

University Offering Beekeeping Classes — Hivey-League School
Unwanted Drone — Junk male

V

Valley Girls — Bees who look for nectar in blooming dales
Veil — Robbin' hood
Vitamin Bee — One that helps store the winter supply of pollen

W

Wallflower — A bee that's not very good at giving directions
Wax — Honey doo
Wax Moth — Foundation varmint
Wax museum — An abandoned hive
Winter — the worst possible time of the year for a bee to have clusterphobia
Wired Foundation — Droop therapy

Y

Young Worker — Bee girl

Z

Zero — the specific gravity of the burnt portion of a beeswax candle

John Dromey has shared his book of 'Daffynitions' with several audiences, most notably, ***Reader's Digest*** *and* ***The Wall Street Journal.***

First Time

DIANA SAMMATARO

Finally, the time has arrived — the first inspection of your package. For the past week or so, you've been very good. All you've done is to fill the empty feeders and you did *not* peek into the colony, did you?

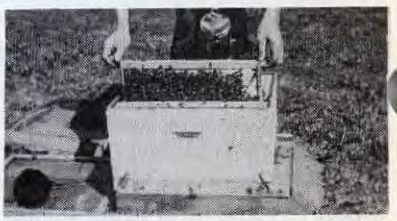
Well now you can. Go ahead and light up your smoker — you remember — start with a small wad of paper, light it, drop it in the smoker. Now add your smoker fuel — dry wood chips, pine cones, burlap rags or corn cobs. Once it is well lit, lay a handful of green grass on top to catch the hot ash.

Suit up and take the smoker out with you to the bee yard. If you have more than one colony there — smoke the entrances of all the hives — give them each about 5 good puffs. Always wait about five minutes after smoking a colony before opening it. It usually takes that long for the smoke to do its job and the bees to fill up on honey. Now go back to the first hive you smoked and, puffing at the entrance again (1) slowly take off the outer cover, then gently pry the inner cover off (2). A little more smoke over the top bars will encourage any remaining bees to go down.

(1) Remove Outer Cover.

(2) Smoke over top bars.

Start at one end of the hive (you should be standing to one side of the hive, not in front of the entrance). Take out the nearest frame. It will probably be only foundation (or dry comb). Lean it against the outside back wall of the hive and move the next frames over to give you more room. Lift out the first frame with bees (3). If the weather has been good and the bees feeding well, your sheets of foundation should now be transformed into frames of white drawn comb (4). If you don't see this happening, you are either not feeding your bees enough (shame on you), or your package is too stressed (too small, too cold or diseased). If the colony is too small (only covers 2 frames) it is best to join together a weak colony with a strong one. You can do this by placing a sheet newspaper between the two hives before joining. They will chew out the paper and slowly become acquainted (see box).



(3) Remove first frame.

Now look at a frame full of bees and see if you can find eggs (5) and brood. A good laying queen will fill in each cell with an egg. Such a compact pattern shows that your queen is young and in good condition. Having sunlight come over your shoulder will greatly aid seeing the tiny eggs and larva.

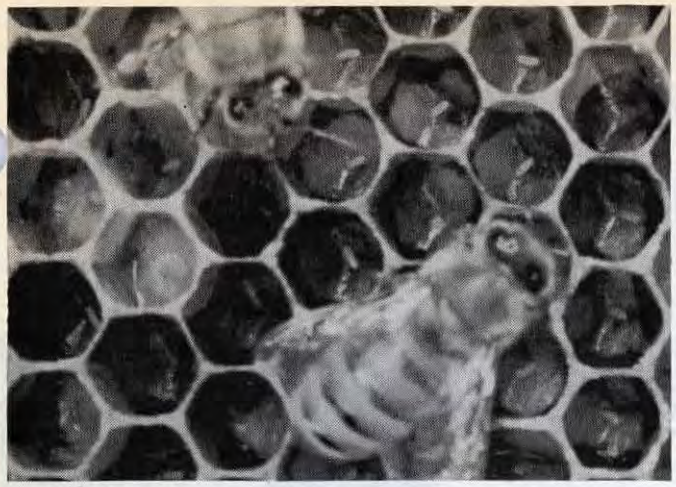
(4) New Comb.

However, if your frame shows a lot of large, bullet shaped drone cells (6), or some queen cells hanging down from the center of the comb (7), your colony may be in trouble. Too much drone brood could mean your queen was improperly mated, became chilled or injured during handling or shipment. If this colony does not seem to do as well as the others, kill this queen and join to another, better colony, using the newspaper method.

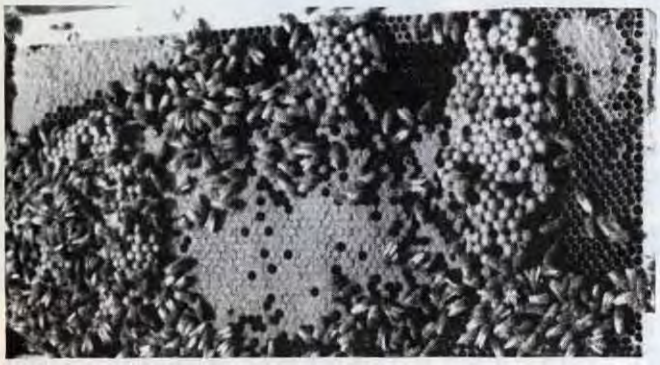
If you see queen cells and little or no brood, your queen may be infected with Nosema disease. If you have been treating your colony with Fumidil-B, this should not happen. Regardless, because the bees are trying to replace the existing queen, and because your colony is weak, you should also join this colony with a stronger one. You can always divide a strong colony to get another, but a weak colony will always be weak and requires special attention.

If everything seems fine, look at the amount of food in each frame. If you see stored honey and pollen in the cells above the brood area (8), and forager bees bringing in lots of pollen on their leg baskets (9), your colony is on the way to becoming strong quickly. Keep an eye out and give them another deep super of foundation when all frames in the first super are drawn out!

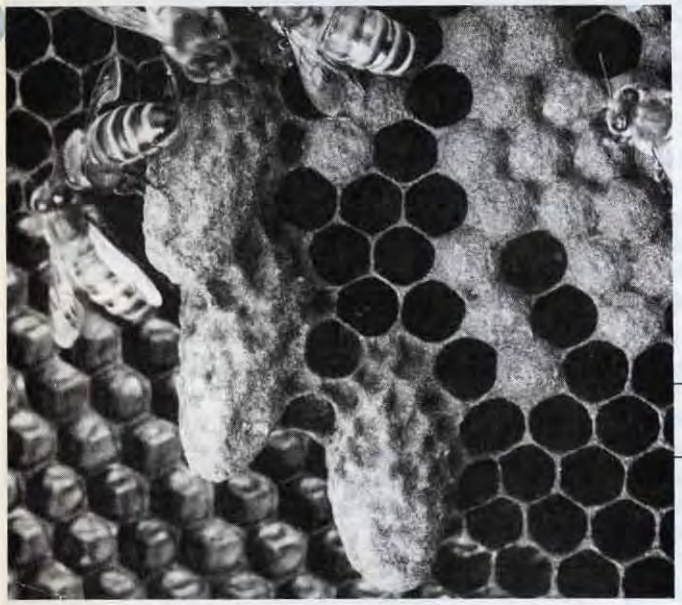
You are now definately on the path to the sweet and fascinating world of beekeeping. If this information doesn't answer all of your questions, we make two suggestions: 1) Join your local Bee Association (see the back of this issue); and 2) get a couple of good books on beginning or intermediate beekeeping. Reading will answer *most* of your questions. Also, try and work with some experienced beekeepers. They'll be glad to help! Enjoy.Δ



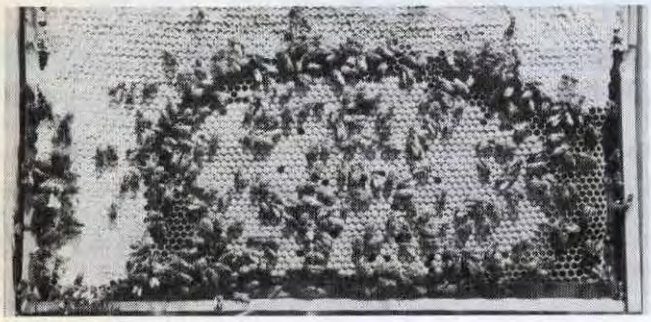
(5) Eggs and Larva.



(6) Drone cells are large and protrude.

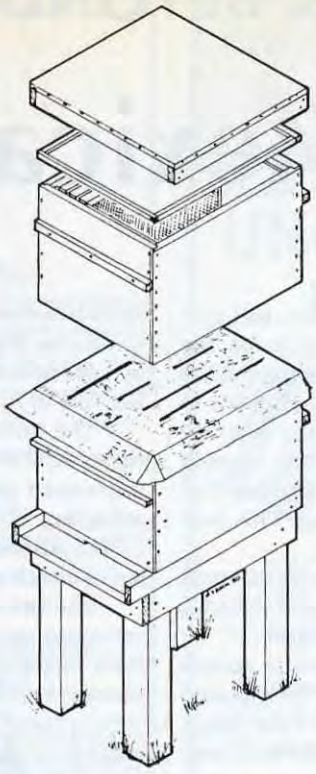


(7) Queen cells, hanging.



(8) Honey and Pollen above brood area.

(9) Collected Pollen



Joining a weak colony to a strong colony will save the weak one and eventually let you divide the newly formed colony back into two.

The reasons for joining two colonies include: queen failure or disappearance in one; a colony weakened by weather or pesticides; or other external factors. DO NOT JOIN A DISEASED COLONY WITH A HEALTHY ONE! Medicate the diseased colony. If it needs a boost, add frames of capped brood.

Here are tips to make the newspaper method work well.

- Place the strong colony on the bottom.
- Cut a few slits in a single sheet of paper before joining together.
- Set the weak colony on top. Field bees returning to their original site will eventually drift to other hives.
- Feeding one or both colonies before, during, and after joining will aid in success.
- The paper will be eaten through in a day or two; you will see scraps on the bottom board and hive entrance.
- Once the colonies are well-united, full of brood and bees, you can once again split them and have two colonies .Δ

THE BRZ & BEYOND

The Mexican Connection

KIM FLOTTUM

Elba Quintero is a petite, soft spoken woman, who happens to be the USDA APHIS Program Manager of the American-Mexican Coop. Project to Control the Movement of the Africanized Honey Bee. Her title is only slightly larger than she is. But don't let her quite demeanor fool you. This lady has a tiger by the tail.

Elba and her Mexican counterpart oversee a large, complex and difficult project The BRZ, in Mexico.

Basically, the BRZ, as it stands now, consists of 2 areas perfectly placed in the Isthmus of Mexico (see map), each with a designated name and function.

Operational Unit 1 (OU1) is on the Pacific Coast, and Operational Unit 2, (OU2) is on the Atlantic side. Currently, OU1 is a 70 x 20 mile rectangle that hugs the coast line. It has 70 SARH technicians and a well supplied lab, including the equipment to perform the FABIS identification techniques. SARH is the Mexican equivalent of the USDA.

Elba Quintero

OU2 is triangular in shape, roughly 120 miles long by 45 miles at its widest. It has a staff of 85 technicians, and a similarly stocked lab.

We caught up with Elba at the ABF meeting in January, and managed to slow her down enough to ask a few questions. We were immediately struck by her enthusiasm for this project, and her role in it.

The units have similar goals and responsibilities. Basically, these are to implement the 'Recommended Technologies', outlined by Dr. Rinderer, USDA ARS during a talk given at the same meeting (see box).

The two units have set up, and are maintaining a swarm trap line across their respective areas. The purpose for these is two-fold.

First, they will monitor the number of swarms moving through the area. These will be captured and identified. Swarms are destroyed regardless of their genetic makeup.

The environment of both units is fairly hostile, making this a difficult project. Few roads and, for the most part jungle habitat, hamper checking and maintaining the traps.

Local residents, too, have been helping themselves to the captured swarms, since these are free bees.

The area between the two units is now being monitored with a trap line. Swarm activity in this mountainous area is unknown, and access is difficult. There are few beekeepers in this area.

Though both units have worked hard, OU1 has had far less success than OU2. This has been due primarily to a low European honey bee population, and few resident beekeepers. Swarms identified as African have been caught past OU1 frequently enough that officials are now deciding if the unit should remain as is, move further north, or be disbanded entirely.

Al Dietz

On the other hand, OU2 has been more fortunate because of the numbers of bees, and beekeepers resident. Though some swarms have moved out of the unit, the number is quite low.

Just north of OU2, Prof. Al Dietz, Univ. GA, has a different type of project underway. Essentially, he is monitoring swarming behavior before the AHB arrives in this area, so that a comparison can be made later. This data will also measure the effectiveness of the trap lines set up in OU2.

Referring to the area already considered Africanized, Elba discussed the effect the AHB is having on honey production. Already in the Yucatan there has been a decline in the number of beekeepers, but the State of Yucatan, The Mexican Gov't., and Maya Apicola (a huge local honey coop.), are working together to teach local beekeepers how to handle this bee, and how to minimize its effects.

There have been numerous animal deaths accorded to AHB, mostly due to inappropriate hive/pen locations. The number of people affected has been extremely low, largely due to the educational programs in place.

Meanwhile, further north, close to the Texas border, the USDA ARS has set up and is maintaining a line of

Continued on Page 230

Tom Rinderer

The Recommened Technologies that are being implemented in the BRZ as outlined by Dr. Tom Rinderer.

Trapping Swarms - Using various types of bait traps to lure roving swarms of honey bees. The latest design actually captures and kills a swarm that moves into it (it uses a mechanical, not poison method).

- To date 18,000 traps have been placed in OU1, which have captured 2,200 swarms, 1,500 of which were AHB.
- 21,000 traps have been placed in OU2, which have captured 1400 swarms, 500 of which were AHB.

Marking Queens - Queen marking is an obvious technique to use for easy identification.

- 6,300 queens have been marked at OU1, of the 7,000 colonies in the area.
- 20,000 queens have been marked in OU2, of the 22,000 colonies present.

Drone Foundation Placing drone foundation in colonies is intended to increase the known drone population in the area.

- OU1 has had minimal drone foundation placed.
- OU2 has only 1,500 colonies with drone foundation.

Queen Excluders

- 2,000 had been placed in January, but many more were ready to place.

Sampling

- Samples of bees are taken and tested for Africanization. This has not worked well in the field, but has been successful in the lab.

Bonus System - The original intent was to pay residents for information or swarms. The initial program set a price of 2500 pesos (about $1.00 U.S.) per swarm identification. This was not successful. However, rewards of useful items drew far more response (kitchen implements, key chains, etc.)

Changing Equipment - Changing from rustic (box, gums) equipment to modern equipment, plus giving 4-6 weeks training in using the new equipment is this goal.

- OU1 had very few rustic colonies to replace.
- OU2 has replaced about 1,000 rustic hives so far.

Quarantine System The quarantine system has not worked well in either unit. The program calls for high populations of European colonies in each unit to ensure a high probability of 'correct' matings. Many migratory beekeepers moved out before AHB moved in, to reduce the risk of colonies becoming contaminated, and not allowed out at a later date.

Public Information - This program has been as successful as expected, and possible. It includes informing beekeepers and the general public about the AHB, the COOP program.

swarm traps too, monitored by staff from the Weslaco, TX Bee Lab. This project was described by Dr. Anita Collins, Research Leader of the Weslaco Lab.

The goal of this work is to establish a base line on swarm behavior prior to the arrival of the AHB. They are measuring frequency, bee morphology and behavior, counting the number of feral colonies, locating beekeepers using rustic equipment and looking at what pests and parasites are present.

They are using the popular pulp flower-pot design trap, put together in pairs, with two pairs at each of the 36 sites. Traps are baited with foundation and swarm lures.

They have found that 2000 - 6000 bees per swarm is average, and about half of the swarms have drones present. They capture about 350 swarms per year.

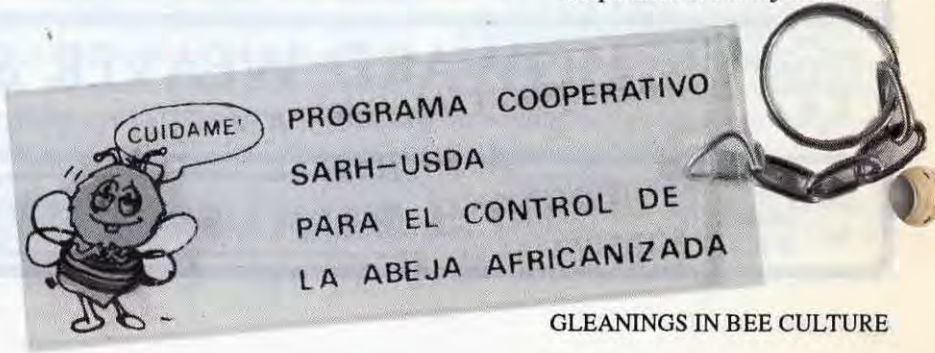
The information gained from these projects will be used when the press, legal, medical or legislative authorities need accurate data about the pre- and post behavior of honey bees. This data will reduce misidentification, misinterpretation of data, and provide solid, factual information for the news media and educational programs to use.

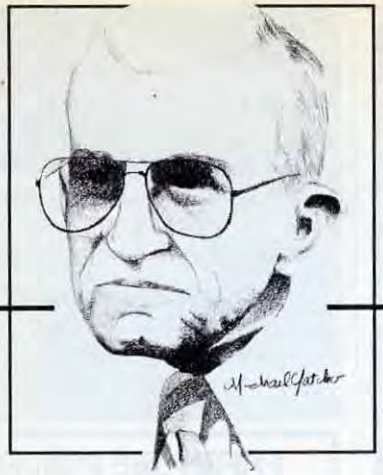
Anita Collins

When viewed in the whole, these projects are providing a wealth of data for American beekeepers to use. We will know what to expect as the AHB moves into an area, how it will react after it has been in an area for a time, and what changes, if any, beekeepers and public officials must make to accommodate these behaviors.

But more importantly, we will know what techniques work well to maintain European stock, what practices to adopt to make working with a hybrid bee more efficient and less dangerous, and especially, what changes we can begin to implement now — before the AHB arrives.Δ

Cooperation is the key in Mexico.





POLITICALLY SPEAKING

GLENN GIBSON

Minco, Oklahoma 73059

"Convention Reflection"

The great conventions of 1989 are now a part of history. In retrospect I do not regret a minute that I spent at the annual meetings of the American Honey Producer's Association in Little Rock, and the American Beekeeping Federation in Indianapolis. Having no official part in the proceedings of either convention, I had plenty of time to visit with members about the pressing issues of 1989. My main objective at both conventions (other than the pleasure of visiting with old friends) was to gather information for future articles. Among other things I was interested in the down-to-earth thinking of beekeepers and scientists on the subject of summits and their effect on the general policy of these two groups. The need of a summit meeting was front-page news following the Houston and Albuquerque conventions a year ago. The ABF/AHPA Executive Committees finally met in Fargo, ND, July 21, 1988. Neither association issued an in-depth report on the meeting, nor was any meaningful follow-up published.

Most industry folks realize that a compromise or an agreement between two groups that have opposing views is a difficult task. Especially so, if their basic principle or authorization is different. Representing the beekeepers is the AHPA's basic principle. This means that all resolutions must comply with this basic principle. On the other hand the ABF's basic principle is representation of beekeepers, honey packers, technical people and bee supply manufacturers.

Since the main impetus for a summit meeting came from the ABF, one would be hopeful and assume that the invitation and pre-summit comment would have a diplomatic tone. The following was published in the Jan-Feb 1988 ABF *NEWSLETTER*

"...After a problem or situation has been created by the actions of a few individuals or a small group which threaten the well-being of the entire industry. If we are to be realistic and honest we should recognize that what is really being called for is for the American Beekeeping Federation to put all its resources in a joint effort to clean up a mess that we had no part in creating."

Frank Robinson

This could hardly be called a diplomatic gesture. In the following paragraph Mr. Robinson tells us that ABF has advised members of Congress that ABF will gladly accept a compromise should the need arise. One would (again) assume that the matter of a compromise should be an item on the summit agenda. I question the wisdom of advising potential opponents (Conte) that a compromise would be acceptable.

Post-summit comment in the July-Aug 1988 issue of the ABF NEWSLETTER included the following bit of information —

"We certainly hope that this spirit of unity will flourish but one can't help having some doubts. To find that only three weeks later one group was already in Washington 'speaking for the industry' doesn't indicate that the spirit of unity is very strong."

A brief report of the summit from AHPA was included in their July-August report. President Adee's wording was written with diplomatic tones. However, the convention-hall comments about the summit were mostly negative.

Ann Rand discusses the problems of compromising in her book, *Capitalism: The Unknown Ideal.* Without identifying the white or black hats, please note the following points lifted from Rand's book:

1. In any conflict between the ABF and AHPA, it will be the more consistent one's ideas that prevail.
2. When opposite basic principles are clearly defined and understood the rational group will win.
3. When the basic principles are not defined the irrational group will win.

Unfortunately there is no good way that anyone, or group, can be given a blue ribbon or declared a winner for being right or wrong in a controversy. Instead we must patiently await later developments. In any situation Ms. Rand's advice is good. None can argue with the need of being consistent and honest while standing ready to defend one's ideas.

Are future summits desirable? I would say so, as long as there would be a possibility of fashioning a reasonable and fruitful compromise acceptable to the industry. Such a compromise was hammered out in Dec. 1985 when the ABF and AHPA worked night and day for a reasonable program in the 1985 Farm Bill.

The industry leaders (still) need your support.Δ

INNER COVER . . . From Page 195

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PHOBIAS

WASHINGTON D.C. — The AAFF* announced in early April that two serious psychotic diseases have been diagnosed and described in articles in their most recent journal.

The first, which chief researcher Dr. Irma Forest describes as "unbelievably widespread", has been labeled *Biophobia.*

Dr. Forest said that "this disease, which we suspect is rapidly spreading, appears to be infecting people nationwide. Though found primariily in urban and suburban areas, it can be found in any home, anywhere. In fact, most of us probably know at least two or three of these people, but just aren't aware of their problem.

"Symptoms are easy to spot", she said, "but the cure, if one exists, has yet to be found."

Dr. Forest described the major symptom as 'an irrational fear of biological systems'. This includes all biological systems — plant, animal — everything that lives, breathes, reproduces.

"Sufferers are people who seldom come in contact with real life" Forest said. "Much of their living experience comes from things purchased at discount department stores, and are usually wrapped in plastic. Television, and especially VCRs are also prominent in their lives.

"An average biophobic comes in contact with living systems only rarely — seldom more than the once-a-week lawn mowing experience, and then usually only after coercion from family members," Forest said.

"Not only have we not found a cure," says Forest, "you can't even identify sufferers by their looks. There's just no way of knowing one until it's too late."

She adds, "Mostly, the apathy towards the world they live in, and often even for themselves is the only noticeable sign, and can be spotted only by trained biophobic analysts. It is a sad, sad disease, with neither defense nor cure".

In the same issue of the AAFF Journal, Dr. Edward Arbor reports on another recently discovered psychotic disease, labeled *Ecophobia.*

Arbor's report describes this disorder as 'an irrational fear of people who support ecological causes' Simply stated, "Sufferers of this disease have a wild, blind hatred of people who believe that preserving nature, and the natural order of things is important", Arbor stated.

"This disorder is almost always manifested by people who are driven to exploit the natural world for profit", states Arbor.

"Symptoms are easily identified, since nearly 100% of the sufferers are financially outstanding in their communities or industries," Arbor says.

Dr. Silvi, the project's coauthor adds that this disease, too, is sad, but fortunately something is being done to stem the tide of destruction.

Silvi says that " . sufferers of this malady can be permanently isolated in secure, completely unnatural environments, greatly reducing . . . exposure to the people they fear most.

"This treatment has worked well in our early tests", Silvi says, "but we haven't isolated nearly enough of them to stop the tremendous damage they are causing both to themselves and the environment"

Dr. Arbor adds that " of course the one truly unique, (and frightening), aspect of this disease is that it can infect large groups of people at the same time — totally changing their behavior overnight. We've seen entire Corporations change in an eyeblink.

"It seems that once a person, or group, is exposed to a huge, profit-making, environment-exploiting opportunity, the body's natural immunity is simply overwhelmed by the disease."

"All supporters of Ecological causes must be on the lookout for these unfortunates", says Silvi.

"The sooner we find them, the sooner we can help", Arbor adds, and concludes, "remember, only you can stop Biophobia and Ecophobia".

* American April Fool Federation

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CHOICES

This has been the year of Tracheal Termination. Reports of heavy losses have been drifting in for the past two or three months, and as spring moves north, the death toll climbs. Widespread mayhem seems to be the rule. Spring has definitely been the season of our discontent.

Invariably, those reporting the losses are looking for someone to blame. Tracheal mites do not spontaneously appear in colonies, you know, they come from somewhere.

"From some dirty, low down, rotten . . " is what I usually hear, loud enough to hear it out in the hall.

I've heard it maybe a hundred times. It's never pretty, and it's always somebody else's fault. I was surprised the first twenty times I was the target of this venom. I'm used to it now.

I can not address history. What has been, has been. If your bees have mites and managed to live through the winter, they'll need treatment this year — or they'll be gone next spring. If you do not have mites now, you are lucky — very lucky.

It makes no difference whether your infection came from a supplier, a pollinator or your neighbor. You can clean up your bees if you want, at least enough to make honey. You have to weigh treatment costs vs. colony replacement, but it seems to me it's cheaper to treat than replace.

You *can* get clean bees if you want. Buying stock from colonies that overwintered in your area is one way. If the parent colony made it, chances are they are clean (I repeat, chances are). Buying queens locally is also a good idea.

Or, the obvious — raise you own. If your colonies are clean, the perfect insurance is to not introduce an unknown variable. Making splits or raising queens is not impossible, and the information you need is available from a variety of sources, including this magazine.

For many though, these options aren't realistic. They don't have the time, the skills, or a local supplier. For these folks the only alternative is to go to a distant producer.

As with any customer/supplier relationship, it is 'buyer beware'. Which, I hasten to add, does not mean all suppliers cannot be trusted. It does mean that you must know who you are dealing with before you buy.

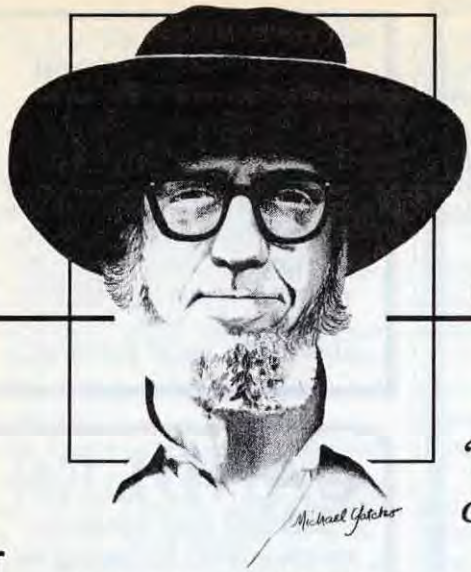
Have you asked *anybody* about a particular supplier? Checked with *that* state's inspection service? Checked with *your* state's inspection service?

These opportunities exist, and it's up to you to use them. However, if you don't investigate your sources, if you don't consider treatments, if you don't raise your own or buy locally, then I will probably be hearing from you *next* spring, all the way out in the hall.Δ

Kim Flottum

For The Record

In the Feb. issue we published a story, as part of our California Dreamin' Collection that was written by Clay Tontz. We did not, however, mention that the story was an excerpt from his recently published book "One For The Honey" We regret this error.



BEE TALK

RICHARD TAYLOR

9374 Route 89, Trumansburg, NY 14886

"Not even the best managed bees will make comb honey if they are in the wrong place."

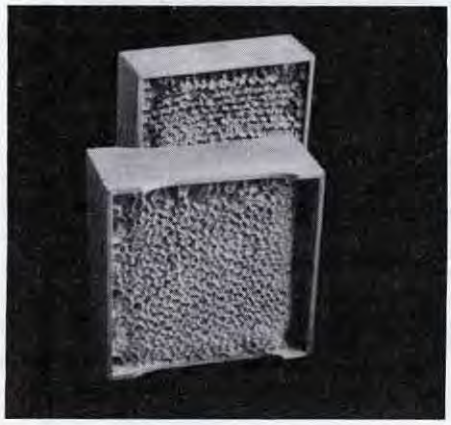
I was thinking the other day of how unfortunate are the names of some of our primary honey plants — Black Locust, Sourwood, Rape, Bitterweed, Gallberry, and so on. These are not words that evoke pleasant images. Of course a name like Sourwood has pleasant associations for someone who is familiar with Sourwood honey, but not for others. Last summer a friend of mine was selling his honey at the local farmers market, and had a little sign pointing out that some of the comb honey there was Black Locust honey. A lady came up and said she was looking for bee honey! She actually imagined that the Black Locust honey had come from locusts.

Of course it is always nice to be able to identify a honey by its floral source, and in the case of comb honey this is usually not difficult, since a given super is likely to be filled with honey from a single source. The honey in the comb does not get mingled to any significant extent with different sources. If you sample one, and find it is basswood, for example, and if all the others in the super have a similar appearance, which they invariably do, then you can be sure all of them are basswood. This is certainly one of the great advantages of raising comb honey, which I have mentioned many times.

I have been thinking quite a bit about comb honey lately — which is, of course, nothing new. But I have noticed that there is a great resurgence of interest in comb honey beekeeping, more than I had realized. When, not long ago, I offered to supply readers with copies of the little message which I stick on the back of all my round sections, in return for a stamped envelope, I was for weeks deluged with requests. And bringing the matter up again, like this, will doubtless produce a fresh deluge, which is fine with me. More and more of my regular mail, too, has to do with comb honey, often from people who are just getting started in this specialized aspect of apiculture. So obviously, there is a rapidly growing interest.

This does suggest to me, however, that some cautions might be in order. For one thing, not all beekeeping areas are good comb honey areas, and unless you are in the right kind of area, you shouldn't try raising comb honey except, perhaps, for you own use. In Maryland for example, you can often get a nice crop of honey from Tulip Poplar, but you can seldom get good comb honey there, because that particular flow is likely to be too early, and then end very abruptly, resulting in sections not properly filled up and finished. This situation is similar in most parts of the south, where honey flows are likely to be sporadic and uncertain.

If you are gong to be a serious comb honey beekeeper, then you need to be in an area where you can pretty much count on at least two really strong honey flows, and these should not be too early in the year, before the colonies have built up, and not too late, when cool weather can cut the flow short and leave you with half-filled sections. If you are in an area where the honey flows sort of dribble along, one after another, without any intense ones of the kind that come from clover and basswood, then I think you will find comb honey beekeeping frustrating and disappointing. Bees have to be sort of forced up into comb honey supers, since there are no empty combs there waiting for the bees to fill them. An intense honey flow will get them into the supers fast, but very few other things will.



Comb honey is a speciality product, and not only can lots of things go wrong, most such things cannot be corrected. There is not much you can do about a section that is capped over but not properly filled, for example. These are a fairly common sight, with is distressing, for it damages the entire comb honey market. Certainly comb honey of high quality is superior, not only to all other honey, but to every other form of sweet. But the problem is, there is perhaps no other product over which quality control is more difficult. We pretty much take what the bees give us. But what we can do is make sure we are in the right area for getting comb honey, and that our management practice is of the kind to take maximum advantage of that area. Poorly managed bees will not make good comb honey any place, but on the other hand, even the best managed bees will not make good comb honey if they are in the wrong place. Δ

QUESTIONS? ANSWERS!

-Q- *Last fall I bought one hive of Italian bees. Now I am looking forward to warm weather with anticipation and dread. I don't know what to expect about stings. How often should I expect to get stung? Should I let the bees sting me on purpose to build up an immunity? Should I consider switching to Caucasian bees?*

Steve Allen
Bloomfield, IN

-A- Bees are usually gentle in the spring, so you'll have time to get used to them. Have a proper veil and cool clothing for protection, wear bee gloves at first, and then, don't even think about stings. You'll get one occasionally, sooner or later. Just scrape the stinger off with your hive tool and pretend nothing happened. What is essential, for the avoidance of stings, is a cool and calm demeanor.

-Q- *I move strong, single-story colonies to the apple orchards each spring for pollination fees, and once they are there I add a second story of drawn combs so I usually get a good early crop of apple blossom honey. But I also get a lot of swarming before I get the bees moved out of the orchards and back to the apiaries. How can that be reduced?*

Duane Waid
Interlaken, NY

-A- Those single-story brood nests get too congested, and merely adding a big super of drawn combs will not do much good. Try this: When you add that second full-depth story, move two or three combs of brood up from the bottom story, exchanging them with drawn combs from up above. That will automatically enlarge the brood nest and give the queen combs to lay in down below. Bees don't like to swarm when there are empty combs right in the middle of their brood nest.

-Q- *I've got what I think should be a prime area for producing some comb honey, about 85 acres of apples, peaches, strawberries and wild flowers. For this, should my hives be single or double story, that is, one hive body, or two?*

Donald K. Mayou, Sr.
Ludlow, MA

-A- Fruit bloom flows are not the best for getting comb honey, because the weather can change suddenly, leaving you with half-filled sections, and the colonies are not up to strength. I have, however, often gotten good crops from these early flows. Use your strongest colonies, and reduce them to a single story. If they get to the point where they might swarm, remove two or three combs of brood and bees, replacing with empty comb or foundation. Then when the flow is over you can recombine the hives into two-story ones if you want to.

-Q- *I am thinking of putting some hives on land that adjoins a low, swampy area. Would this create problems of dampness, mildew and so on?*

Tom Young
New London, WI

-A- The mere proximity of such an area would not, I think, pose any problem but what is very important is that your bees not be at that same low level, even if on dry ground. Colonies do not winter well at all when located in low areas.

-Q- *Brother Adam, in his book* Breeding The Honey Bee, *says that while our Italian bees rear lots of brood, this results in a loss of vitality and longevity, and that such fecundity is therefore of no advantage. Does this mean that we do not get our money's worth with package bees?*

Wil Clayton
Benedict, NE

-A- I cannot take that opinion very seriously. I have always found Italian bees to be fine producers. I do think, however, that it is preferable to start colonies from nucs, made up from one's own apiaries, first because it is much cheaper, second because the colonies build up faster, and third because it reduces the chance of importing pests into your apiary.

-Q- *How many bees are there in a pound?*

Perry Bontrager
Shipshewana, IN

-A- It varies. Drones weigh more than workers, and a worker full of nectar weighs more than one without. According to Kenneth G. Ross, of the University of Georgia, writing for *The Illustrated Encyclopedia of Beekeeping* ed. by Morse and Hooper, there are 4,451 newly emerged workers per pound, 5,159 mature workers per pound, 3,492 heavily smoked workers per pound, and 2,000 drones per pound. These figures were derived from Ms. C. Mitchell, of the University of California.

-Q- *On my spring inspection of my hive I could find no queen nor any sign of egg laying. The bees were bringing in pollen, and there was pollen in the combs. Should I requeen, or check again in a couple of weeks?*

E. J. Fisher
Valley Stream, NY

-A- There certainly should be brood in a colony in Mid-April. On the other hand, when bees are bringing in pollen this is usually a fairly reliable sign that they are queenright. If there is no brood in a couple of weeks, requeen them.

Questions are welcomed. Address: Dr. Richard Taylor, 9374 Route 89, Trumansburg, NY 14886, enclosing a stamped envelope for reply. No telephone calls, please.

Richard Taylor

News, Comments . . .

BUSINESS NEWS

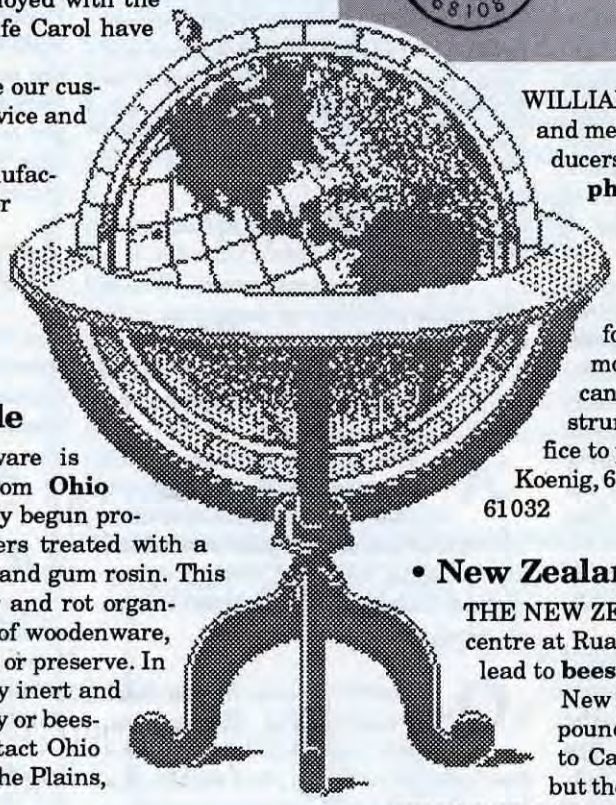
• Cook & Beals Names New President

THE TITLES have changed but the faces and service are the same. The new President of **Cook & Beals,** Inc. of Loup City, NE is Patrick Kuehl, son of retiring President Jim Kuehl. Jim will be active in the company as a consultant, putting his 20 years experience to good use. He will also remain busy with his commercial apiary.

Patrick spent four years in the U.S. Navy, where he earned a High Pressure welding certificate before returning to Loup City. He has been employed with the company since 1977. He and wife Carol have two sons and a daughter.

"We will continue to provide our customers with our best quality service and sales", says Pat.

Cook & Beals, Inc. manufactures extracting equipment for the commercial honey producer. For more information, contact Cook & Beals, Inc., Loup City, NE 68853, (308) 745-0154



• Paraffin Dipped Woodenware Available

PARAFFIN DIPPED woodenware is now commercially available from **Ohio Bee Supply.** They have recently begun producing bottom boards and supers treated with a boiling mixture of paraffin wax and gum rosin. This dipping process seals out water and rot organisms, greatly extending the life of woodenware, and eliminates the need to paint or preserve. In addition, the mixture is virtually inert and will not harm bees or taint honey or beeswax. For more information, contact Ohio Bee Supply, 204 N. Plains Rd., The Plains, OH 45780 (614) 797-4943

• B-Tec Takes Off

TWO INVENTORS at Oak Ridge National Laboratory (ORNL) have formed a company to make and sell portable Africanized bee detectors under a license from Martin Marietta Energy Systems, Inc.

Howard Kerr and Michael Buchanan founded the company named **B-Tec.** They, and Kenneth Valentine, a former researcher who is also a principal in the new company, invented the bee detector.

The initial market will be commercial beekeepers and state regulatory agencies, Kerr said. He said the basic objective of **B-Tec** is "to solve beekeeping problems."

B-Tec plans to modify the detector system, which originally employed colored lights to indicate differences in frequency. The newer version will emit a sound to alert the operator when Africanized bees are detected.

Martin Marietta Energy Systems claims no interest in funds received under the license. Instead, under a DOE approved formula, royalties are used to support other technology transfer activities.

• First Day Stamp Offered

WILLIAM KOENIG, avid stamp collector and member of the American Honey Producers, has 700 **First Day Issue pamphlets** available for sale. Measuring 5-1/2" X 8-1/2", the cards were difficult to obtain, and remain scarce.

The pamphlets are available for $10.50, plus $1.00 postage. The money will be donated to the American Honey Producers, who were instrumental in influencing the post office to produce this stamp. Contact W.R. Koenig, 652 W. Stephenson St., Freeport, IL 61032

• New Zealand Sea Bees

THE NEW ZEALAND Government agriculture centre at Ruakua is conducting trials that may lead to **bees being exported by sea.**

New Zealand now exports about 22,000 pounds of packaged bees a year, mainly to Canada, worth about $310,000 US, but the high cost of air freight has meant export prospects are limited.

Results from recent controlled temperature trials now suggest sea voyages of up to 24 days are distinctly possible said government apiculturist Dr. Mark Goodwin.

"We are looking at actually sending a trial shipment by sea after February. The problem is trying to get a heap of bees in a container together and being able to maintain the temperature level without the bees generating too much heat and killing themselves."

Bee exported by plane take two or three days and are kept at about 40°F. Maintaining that temperature on a 20 to 24 day voyage "would stress the bees because it is so cold", Goodwin said, so the simulated trials have involved temperatures as high as about 80°F, with quite reasonable success.

OTHER NEWS

• Farm Crime Growing

OVER THE PAST 30 YEARS, farm crime increased 400% because farms have become more attractive targets, reports the National Rural Crime Center at Ohio State University. Criminals discovered that farmers own expensive equipment, are away from home often and live in isolated areas, says Joseph Donnermeyer, director of the center.

Vandalism is a problem too, with livestock occasional targets, Donnermeyer says. Sometimes, a farmer will walk into a field and find that someone has butchered a beef cow with a chain saw, he says. Beehives are no exception to either vandalism or theft he adds.

Farmers can do several things to protect themselves and their property. Thieves are less tempted to steal something if they can't see it, Donnermeyer says. The biggest theft deterrent is to keep extra or unused equipment and supplies stored in a secure building, he says.

All farmers should have a complete inventory of their property, he adds, including that pile of supers behind the garage, the pallets next to the tool shed and the stack of covers in the honey house. He suggests etching or branding a serial number or other identification mark on every piece of big equipment and videotaping the contents of buildings and the house. Farmers, and beekeepers, need to treat their property like a business person treats a company, and that's by controlling the inventory, he says.

If property is stolen, you must be able to prove it's yours once it's recovered, Donnermeyer says. Without positive identification, owners can't get it back or press charges, he says.

For more information on rural crime and crime prevention, contact the National Rural Crime Prevention Center, Ohio State University, 2120 Fyffe Road, Columbus, OH 43210, or (614) 292-1467

• Endangered Bears

FOUR HUNDRED black bears were recently found slaughtered in NY state, killed by a gang of poachers. Federal authorities quickly make 23 arrests, shutting down, at least temporarily, the group operating out of NY, MA and CT.

Agents reported that bears are illegally killed for their paws, and especially their gall bladders. The bears are stripped of their essential parts, which are then processed and shipped to the orient.

Processed and dried gall bladders are selling for about $2000 each on the black market in Hong Kong. They are sold as an aphrodisiac, believed to enhance sexual prowess.

However, while northeast game officials are expressing concern about the declining black bear population in the area, beekeepers there are finding just the opposite.

The situation is certainly uncomfortable for the bears, and unbearable for the beekeepers.

• Honey Board News

FIVE MEMBERS AND SIX alternate members were recently reappointed to the National Honey Board. Reappointed were Richard Adee, Bruce, SD, John Miller, Gackle, ND, Bruce Beekman, Turlock CA, Randall Johnson, Nampa, ID, Steve Klein, Marshall, MN, Ann Garbor, Corydon, IA, Harry Rodenberg, Wolf Point, MT, Larry Krause, Riverton, WY, R. Gamber II, Lancaster, PA, Robert Appel, Streator, IL, and Mike Ingalls, Sultan, WA.

BITS, PIECES and STUFF

• New England Harvest: Fantastic!

THE 1988 DROUGHT seems to have had little effect on New England's 1988 fruit harvest. MA cranberry production, 1.91 million barrels, exceeded 1987's output by 32%. Maine's wild blueberry crop was a record breaking 45 million pounds, 24% above 1987. The six state commercial apple production increased by 11% over 1987, to 8.1 million bushels. All of these crops require honey bee pollination for maximum yield.

• Bar Code Required

IN LATE JANUARY, ASCS officials announced that a UPC code and symbol must be on each primary package and shipping container accepted by ASCS starting in September, 1989. Existing container supplies can be used, without attached code until that time.

USDA has acquired a unique manufacturer's ID number for this application so a contractor need not join the UCC, but suppliers are urged to contact UCC, 8163 Old Yankee Rd., Suite J., Dayton OH, 45458 (513) 435-3870 for more information. Also, a comprehensive article on how-to-use the UPC was published in *Bee Culture* in Feb. 1989.

• Plastics, My Boy, Plastics!

SCIENTISTS AT THE RUTGERS, NJ Center For Plastics Recycling Research have developed a technique to turn waste plastic foam into sturdy, long lasting lumber.

Polystyrene, which fast food container and school lunch trays are made of, compose 40% of the 'lumber', while the remaining 60% is made of more valuable plastic, collected from plastic bottles that have been melted and remolded.

The molded plastic timbers are being used to make park benches in Oregon, picnic tables in NY and recreational decks in FL. (Can beehives be far behind?)

Only 1% of plastic containers are being recycled now, but what is being used will make carpeting, insulation, bathtubs, boat hulls, toys, flower pots, pipes, pails and yes — lumber.

Unknown yet, is whether the lumber is durable, will hold nails over several years, will hold color and is economically feasible.

• Sweet Brazil

IN 1988, BRAZIL EXPORTED to the United States only 260,000 pounds of honey, certainly far behind China's 16 million, the 9 million or so from both Canada and Argentina, and even the 2 million pounds from Germany.

But Brazil produces fully 25% of the world's sugar supply. During 1988, Brazil produced 228 million TONS of sugar cane, on 11 million acres. This puts them second only to India in world production. Remarkably though, Brazil uses 61% of this to produce ethanol, the main fuel for their automobiles.

• ND Notice Fails

A BILL WAS RECENTLY introduced into the ND Legislative assembly to restrict apiary locations. The bill would limit apiary placement at greater than one-half mile from a public highway, unless a notice is posted alongside the highway, on each side of the apiary, that an apiary is located within two miles of the notice. The bill failed, this time.

• Federation 500

BLESSED BY a week of unseasonably mild weather, the ABF's 45th annual convention was attended by over 500 people when it met in Indianapolis in Jan. 1989.

The Federation returned it's full slate of officials to office, Reg Wilbanks, President, and Bob Brandi, V. Pres.

The Board of Directors reelected Pat Astor and David Sundberg to their second two-year terms on the Executive Committee. They rejoin John Haefeli, Alan King, and Bill Shearman on the committee, along with past president Randall Johnson.

Crowned as 1989 American Honey Queen was Naomi Gunter, of Towner, ND. She is the daughter to Jane Gunter and the late Larry Gunter, a former president of the Federation. Named 1989 Honey Princess was Jill Mathias of Hummelstown, PA. She is the daughter of Stewart and Carol Mathias.

• Impulse Honey Sales Threatened

FEWER SUPERMARKETS, busier shoppers, and more items threaten the sale of impulse items, such as honey, according to a research report released by ICD Hearst. The salient facts are :

The number of stores has dropped from 152,000 in 1986 to 150,000 in 1987; shoppers make fewer trips to stores - 2.4/week in 1984 and 1.7/week in 1987.

Another report, this from SRI International, a market research firm, claims 33% of today's shoppers are from 'harried' households, (spend as little time as possible in supermarkets, but have high incomes); 29% are from traditional households (economy minded and unlikely to buy on impulse); and 22% are from financially restricted households (good value shoppers); the remaining are singles (high income convenience shoppers).

To get good shelf space in stores with decreasing space available, the researchers recommend making contacts early, when the store is being built or remodeled. Also, use new or different fixtures (display shelves or isle stands), display in special areas related to honey (jams and jellies, cooking, deli counters). Finally, the authors suggest alternative, non-traditional outlets, including beauty salons, convenience stores, auto parts stores and any local recreational, tourist outlet.

. . . & Events

☆ INTERNATIONAL ☆

The 32nd International Apicultural Congress (Apimondia) will be held in Rio de Janeiro, Brazil, October 22-28, Sunday-Saturday. The registration fee before May 20 is $150/principal, $125/spouse; afterwards, it is $180/150. It covers admission to all sessions; entrance to Expo-Apis '89; a one-day tour; congress materials; a folklore show; a farewell cocktail party; and a book on congress proceedings.

For more information contact Apicenter do Brasil, Pordutos Apicolas E Naturais, LTDA M.E., Rus Felipe de Oliveira, 4-Loja C, CEP 22.011, Copacabana, Rio de Janeiro, Brasil, South America.

Apimondia Trip Planned. As it did for Apimondia Adelaide, Acapulco and Athens, MD will put together a group to save on airfares, hotel expenses and private tours. The goal is at least 15 from anywhere on the Eastern seaboard for a two-week period. For more information or an Apimondia registration form contact John Romanik, 3200 Pine Orchard Lane, Ellicott City, MD 21043, (301) 465-1809.

Tour to England planned, with beekeepers in mind. Starting August 3, events include visits with English beekeepers, London excursions, museums, the moors, Hadrian's Wall and Thorne's. For more information contact Harold Liberman, Global Nature Tours, Inc., 2701 Oxford Circle, Upper Marlboro, MD 20772, (301) 627-4777 evenings and weekends.

The 11th International Congress of the International Union for the Study of Social Insects will be held August 5-11, 1990 in Bangalore, India. For more information on registration or the program, contact: The Secretary, 11th Congress of IUSSI, Dept. of Entomology, University of Ag. Sciences, G.K.V.K. Campers, Bangalore 560 065, India.

Fanshaw College, London, Ontario to hold Practical Beekeeping Course. Designed for experienced and novice beekeepers alike, topics include honey production, pollination and other basics.

Harold Killins, B.S.A., is the instructor, who will teach four classroom sessions, and six outdoor sessions, all held on Saturday's. The first class begins April 3, 1989, and continues for 9 more weeks. For more information contact Joe Dunn, Fanshaw College, 520 First St., Bay 20, London Ontario, Canada N6J-3M2, (519) 452-4441.

When planning your vacation please remember that the **Annual Conference of the Eastern Apiculture (EAS)** will take place this year in July at the University of New Hampshire in Durham, New Hampshire.

The Short Course will take place Monday, July 10 to Wednesday, July 12. The Conference will take place Thurssay, July 13 to Saturday, July 15. More details will follow.

Display Index

1989 - Who's Who in Apiculture

To supply a handy reference of names and addresses of State and Provincial Apiary Inspectors, Secretaries of Beekeepers' Associations, Extension workers in beekeeping, and other information often needed by our readers and Industry Leaders, we have amended our Who's Who in Apiculture, effective April 1, 1989. The federal varroa mite quarantine was under consideration when this list was compiled. The status of colony or apiary registration for individual states was uncertain. For your own protection, we urge you to contact a state's Dept. of Agric. before moving bees into or out of a state.

State or Province	Bees on Combs Admitted	Apiary Register. Required	Fee	Secretary — State Association Address & Phone Number
AL*	Not Allowed	Yes	Yes	Bill Gafford, 1121 Mobile Rd., Greenville, 36032
AK	None	No	No	Fletcher Miller, Box 140173, Anchorage, 99508, Ph. (907) 338-4694
Alt.*	Not Allowed	Yes	No	Jean Guilbault, 12919 135th St., Edmonton
AZ*	Cer. & Per.	Yes	No	Barbara Stockwell, Box 368, Arivaca, 85601, Ph. 398-2366
AR*	Cer. & Per.	Yes	No	Darrel Jester, Rt. 1, Box 489, Osceola, 72370
B.C.*	Not Allowed	Yes	No	Richard Springborn, Box 186, Vernon VIT 6M2, Ph. (604) 542-2903
CA*	Certificate	Yes	No	Carol Penner, 19980 Pine Creek Road, Red Bluff, 96080
CO*	Cer. & Per.	Yes	Yes	Mrs. Tom Jones, 605 No. Columbus, Yuma, 80559
CT*	Cer. & Per.	No	Yes	Isabelle Muzekevik, 226 Charter Oak St., Manchester, 06040, Ph. (203) 649-1746
DE*	Cer. & Per.	Yes	No	Doris Payne, 214 Plymouth Rd., Wilmington 19803
FL*	Cer. & Per.	No	No	Ms. L. Cutts, 2237 NW 16th Ave., Gainseville, 33156
GA*	Pending	Yes	No	Cecil T. Sheppard, 4054 Briarglade Way, Doraville, 30340-5112, (404) 491-3734
HI*	Not Allowed	No	No	Lee Ong Chun, 2115 N. School St., Honolulu, 96819, (808) 841-6440
IA*	Cer. & Per.	Yes	No	Dan Sowers, Rt. #2, Maxwell, 50161, Ph. (515) 387-8814
ID	Certificate	Yes	Yes	Jim Ellis, 3615 W. Idaho Blvd., Emmett, 83617
IL*	Cer. & Per.	Yes	No	Rita Taylor, Rt. 2, Box 249, Pleasant Plains, 62677, Ph. (217) 626-1319
IN*	Cer. & Per.	Yes	No	Claude F. Wade, Room 613, St. Of. Bldg., Indianapolis, 46204, Ph. (317) 232-4120
KS*	Cer. & Per.	Opt.	Yes	Ron Fleming, Box 818, Ogden, 66517
KY*	Cer. & Per.	Yes	Yes	Pat Norman, 4825 Preston Dr., Louisville, 40213
LA*	Not Allowed	Yes	Yes	Jim Stotts, Lafayette, (318) 981-8470
Man.*	Not Allowed	No	No	Barry Fingler, 911-401 York, Winnepeg R3C 0P8
ME*	None	Yes	Yes	Beth Pritchard, RD #1, Readfield, 04355
MD*	Permit	Yes	No	John Romanik, 3200 Pine Orchard Lane, Ellicot Cit, 21043
MA*	Cer. & Per.	Pend.	Pend.	Ellis B. Hayden, Jr., 62 Main St., Norfolk, 02056, (617) 528-5362
MI*	Cer. & Per.	Yes	Yes	Millie Hathaway, P. O. Box 333, Suttons Bay, 49682, (616) 271-3192
MN*	Cer. & Per.	Yes	Yes	Darell Rufer, Rt. 1, Box 408R, Waverly, 55390, (612) 658-4645
MS*	Pending	Yes	No	Harry R. Fulton, P. O. Box 5207, Mississippi State, 39762, (601) 325-3390
MO*	Cer. & Per.	No	No	Jim Thaxter, Rt. 4, Box 60E, Moberly, 65270, (816) 263-2694
MT	Cer. & Per.	Yes	Yes	Marjorie M. Barnes, 24 N. Walnut St., Dillon, 59725, (406) 683-4973
NE*	Cer. & Per.	Yes	No	Sally Leu, Rt. 4, Box 194, Norfolk, 68701, (402) 371-0636
NV*	Permit	Yes	Yes	Bill Goff, 14060 Edmands Dr., Reno, 89511, (702) 851-1888
N.B.	Not Allowed	Yes	No	Fred B. Ervine, Site 3, Box 13, R. R. #9, Fredericton, NB, E3B 4X9
NH*	Certificate	No	No	Franics W. Dodge, P. O. Box 91, Goffstown, 03045, Ph. 497-4507
NJ*	Certificate	No	No	Gary L. Bradshaw, R. D. #2, Box 281, Stockton, 08559, Ph. (201) 996-6331
NM*	Certificate	Yes	Yes	Mrs. Betty J. Cole, 600 N. Bosque Loop, Bosque Farms, 87068, Ph. (505) 869-2841
NY*	Certificate	Yes	No	Judith A. Doan, 1263 Redman Rd., Hamlin, 14464, (716) 964-3121
NC*	Cer. & Per.	No	No	Dr. John Ambrose, 1403 Varsity Dr., Raleigh, 27606
ND*	Cer. & Per.	Yes	Yes	Mike Stewart, R. R. 1, Box 87C, Rolette, Ph. (701) 245-3741
N.S.*	Not Allowed	No	Yes	Earl Blades, P. O. Box 550, Truro, B2N 5E3, (906) 895-1571
OH*	Cer. & Per.	Yes	Yes	Jim Thompson, 8227 Eby Rd., Smithvile, 44677
OK*	Cer. & Per.	Yes	Yes	M. J. Bragg, Rt. 1, Box 105, Boswell, 74727, Ph. (405) 566-2504
Ont.*	None	Yes	No	Patricia Westlake, RR #3, Bayfield, Ont. NOM 1G0, (519) 565-5261
OR*	Certificate	Yes	Yes	Phyllis Shoemake, 1874 Winchester, Salem, 973-4
PA*	Cer. & Per.	No	No	Yvonne Crimbring, R.D. 1, Box 315, Canton, 17724, (717) 673-8201
P.E.I.*	Not Allowed	Yes	No	G. Paynter, P.O. Box 1114, Charlottetown, C1A 7MB PEI
P. Rico	Not Allowed	No	No	Tito Nieves, P. O. Box 471, Lares, 00669
Que.*	Not Allowed	No	No	L. Dion, C.P., 656 St. Hyacinthe, Que.
RI*	Certificate	Yes	No	Elizabeth Latham, 9 Fountain Spring Lane, Johnston, 02919, (401) 949-4325
Sask.*	Not Allowed	Yes	No	John Gruszka, Box 3003, Prince Albert S6V 6G1, (306) 953-2790
SC	Certificate	No	No	William L. Baker, 2663 Ford St., Sumter, 29150
SD*	Cer. & Per.	Yes	Yes	Bret Adee, Pox 368, Bruce, 59220
TN*	Cer. & Per.	Yes	No	William D. Lane, 5801 Vassar St., Memphis, 38119, (901) 683-7494
TX*	Cer. & Per.	Yes	Yes	Marilyn Wilkerson, 3800 Hatcher, Waco, 76705
UT	Certificate	Pend.	Yes	Jones Bee Co., 286 Andrew Lane, Murray, 84107
VT*	Limited	Yes	No	Michele Beebe, 116 State St., State Office Bldg., Montpelier, 05602
VA*	Cer. & Per.	Yes	No	Maryethel Miller, 28 Teton Dr., Fredericksburg, 22401
WA*	Certificate	Yes	No	Alice Bounds, P. O. Box 602, Toppenish, 98948, (509) 865-2279
WV*	Cer. & Per.	Yes	No	Ron Duncan, Rt. 3, Box 176A, Bridgeport, WV 26330, (304) 842-4567
WI*	Cer. & Per.	No	No	Judy Lapp, P.O. Box 460, Reeseville, 53599, (414) 927-3848
WY*	Certificate	Yes	Yes	Richard Sackett, SR1, Box 39A, Sundance, 82729

*Publish a newsletter sent to State Association Members

State or Province	Professor in Charge of Beekeeping Course (Write: Prof. of Apiculture, c/o State University)	Extension Personnel in Beekeeping (Write: Beekeeping Exten. Spec. c/o State University)	Inspector State or Province (Write: c/o Dept. of Agric.) State Capitol
AL	Dr. James H. Cane	n/a	John Bloch, Montogmery 36193
AK	n/a	Wayne Vandre	John Cramer, Bx 949, Palmer 99645
Alta.	Dennis McKenna	D. MacDonald, Falher TOH 1MO	D. Colter, Falher, TOH 1MO
AZ	Dr. Norbert Kauffeld, Tucson	n/a	Larry Sanford, Phoenix 85007, 255-4393
AR	n/a	Dr. L. O. Warren, Fayettville	Donald E. Bailey, Little Rock 72205
B.C.	Dr. Mark Winston, Burnaby	Douglas McCutcheon,Surrey	Douglas McCutcheon, Surrey V35 4W7
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CT	Prof. A. Avitabile, Waterbury	George Schuessler, New Haven	Robert Purvis, New Haven, 06504
DE	Dr. Dewey Caron, Newark	Dr. Dewey Caron, Newark	Michael Brown, Dover 19901
FL	Dr. M. Tom Sanford, Gainesville	Dr. M. Tom Sanford, Gainesville	Laurence Cutts, Gainesville, 32602 (904) 372-3505, Ext. 128
GA	Dr. Alfred Dietz, Athens	n/a	James P. Harron, Atlanta 30334
HI	n/a	n/a	None
ID	n/a	n/a	Dr. Roger Vaga, Boise 83707
IL	n/a	E. E. Killion, Paris	Scott Beam, Springfield, 62974
IN	Bill Fishang, W. Lafayette	Bill Fishang, W. Lafayette	Claude F. Wade, Indianapolis 46204
IA	n/a	Jerry Dewitt	G.L. Stanley, Dept. Ag., Des Moines 50319
KS	n/a	n/a	G. R. Ross, Topeka 66612, (913) 296-3016
KY	Dr. Glenn Hayes, Richmond	Dr. R. Scheibner, Lexington	n/a
LA	n/a	Dale Pollet, Baton Rouge	Dr. Jimmy Dunkley, B. Rouge 70893
ME	n/a	Anthony Jadczak, Augusta	Anthony Jadczak, Augusta 04333
Man.	Dr. S. C. Jay, Winnipeg	Don Dixon, Winnipeg	Don Dixon, Winnipeg R3C OP8 (204) 945-3861
MD	Dr. Lee Hellman, College Park	Melanie Odlum, College Park	Barton Smith, Jr., Annapolis 21401
MA	Richard Bonney, Amherst	Richard Bonney, Amherst	Alfred R. Carl, Jr., Springfield 01089 (413) 736-2764
MI	Dr. R. Hoopingarner, E. Lansing	Dr. R. Hoopingarner, E. Lansing	John Dreeves, Lansing 48909
MN	Dr. Basil Furgala, St. Paul	Dr. Basil Furgala, St. Paul	Arthur Mason, St. Paul 55107
MS	Harry Fulton, MS State and Dr. James Jarratt, Starkville, MS (short course only)	n/a Dr. James Jarratt, Starkville, MS	Harry R. Fulton, Starkville 39762 (601) 325-3390
MO	Dr. Wayne Atkins, Columbia & Dr. Michael Roling, Sprngfld.	Dr. Flernoy Jones, Columbia	Joseph Francka, Jefferson City 65102
MT	n/a	n/a	Willard A. Kissinger, Helena 59601 (406) 444-3730
NE	Cliff Walstrom, Lincoln, 68583	Fred Bayendale, Lincoln	Marion D. Ellis, Lincoln 68509
NV	Dr. Harold Arnett, Reno	n/a	John O'Brien, Dept. of Ag., Reno 89510
N.B.	n/a	n/a	Bruce Palmer, Fredericton, Ag. & Rural Devl. (506) 453-3423
NC	Dr. John Ambrose, Raleigh	Dr. John Ambrose, Raleigh	James F. Greene, Raleigh 27611
NH	n/a	S. E. Thewke, Concord 03301	S. E. Thewke, Concord 03301, 271-2750
NJ	n/a	n/a	Jack Matthenius Jr., Phillipsburg, 08865
NM	Dr. Elbert Jaycox, Las Cruces	n/a	Barry Patterson, Las Cruces 88003
NY	Dr. Roger A. Morse, Ithaca	Dr. Roger A. Morse, Ithaca	Robert J. Mungari, Albany
ND	Dean McBride, Fargo 58103	Dr. Dennis Kopp, Fargo	Judy Carlson, Bismarck 58505
N.S.	n/a	Dick Rogers, Truro	Dick Rogers, Truro (906) 895-1571
OH	Dr. Robert Page, Columbus	Dr. James Tew, ATI, Wooster	Gordon Rudloff, Reynoldsburg 43068
OK	Dr. William A. Drew, Stillwater	Darrell Suffridge, Ext. Ctr., Ada	Dr. Steve Kendall, OK City 73105
Ont.	Dr. C. Scott-Dupree, Guelph	Doug McRory, Milton	Doug McRory, Milton L9T 3J7 (416) 878-2314
OR	Dr. D. M. Burgett, Corvallis	Dr. D. M. Burgett, Corvallis	David Turner, Salem 97310
PA	Dr. Robert Berthold, Doylestown	n/a	James Steinhauer, Harrisburg 17120
P. E. I.	n/a	Elaine Clark, Charlottetown	Elaine Clark, Charlottetown C1A 7J8
P. Rico	Dr. M. Moya, Quintana	Jose Munoz, Humacao	n/a
Que.	Dr. J. Louis Villeneuve, Sainte Foy	Dr. J. Louis Villeneuve, Sainte Foy	Dr. J. Louis Villeneuve, Sainte Foy
RI	n/a	n/a	Robert Relli, Providence
Sask.	Dr. S. H. Nelson, Saskatoon	John Gruszka, Prince Albert	John Gruszka, Prince Albert
SC	Dave Alverson, Clemson	J. Howard Jr., Clemson	J. Howard Jr., Clemson 29621
SD	Dr. Robert Walstrom, Brookings	n/a	Bob Reiners, Pierre 57501
TN	Dr. Charles Pless, Knoxville	Harry E. Williams, Knoxville	Thomas Hart, Nashville 37204 (615) 360-0137
TX	Dr. James Smith, College Station	Dr. John Thomas, College Station	Paul Jackson, College Station 77843
UT	Prof. Wm. P. Nye, Logan	Jay B. Karren, Logan	Ed Bianco, Salt Lake 84116
VT	n/a	n/a	Richard Drutchas, Montpelier 05602
VA	Dr. Richard Fell, VPI, Blacksburg	Dr. Richard Fell, Blacksburg	Homer Powers, Richmond 23209
WA	Dr. Dan Mayer, Prosser	Dr. Dan Mayer, Prosser	James C. Bach, Olympia 98504 (206) 872-6005
WV	Dr. James Amrine, Morgantown	n/a	Mat Cochran, Charleston, (304) 348-2212
WI	Dr. Walter Gojmerac, Madison	Dr. Walter Gojmerac, Madison	Marlin Conrad, Madison 53707
WY	n/a	n/a	Walter Patch, Cheyenne 82002

• Industry Organizations

•American Bee Breeders Association. Pres. Don Benefield, 1907 Carolina Circle, Hixson, Tenn.; 1st V-Pres. Richard Harrell, Jr., Hayneville, AL; 2nd V-Pres. Andy Webb, Calvert AL; Sec-Treas. Coralyn Harrell, Hayneville, AL.

•American Beekeeping Federation. Pres., Reg Wilbanks, P. O. Box 12, Claxton, GA 30417; Sec.-Treas., Troy Fore, P.O. Box 1038, Jesup, GA 31545.

•American Honey Producers Association. Pres., Richard Adee, P. O. Box 368, Bruce, SD 57220, (605) 627-5621; Vice Pres., Jerry Cole, NM.

•American Honey Queen 1989. Naomi Gunter, Tawnee, SD

•Apiary Inspectors of America. Pres., James Bach; Asst. Supervisor, Washington Dept. of Agric., Plant Services Branch, P. O. Box 1064, Kent, WA 98032; Sec., I. Barton Smith, Jr., State Apiary Inspector, MD Dept. of Agric., 50 Harry S. Truman Pkwy., Annapolis, MD 21401 (301) 841-5920; Treas., Willard Kissinger, State Apiarist, Montana Dept. of Agric. & Livestock Bld., Helena, MT 59a620.

•California Honey Advisory Board. Marilyn Kiser, Manager, 522 W. Napa St., Box 265, Sonoma, CA 95476. (707) 935-1185.

•Eastern Apicultural Society of North America, Inc. Chairman, Robert Cole, Rt. 1, Box 175, Blowing Rock, NY 28605; Pres., Loretta Surprenant, Miner Institute, Chazy, NY 12921, (518) 846-8020. Treas., Don Chirnside, 201 Briarbrook Dr., North Kingstown, RI 02852.

•Western Apicultural Society of North America. Pres., Daniel Mayer, IAREC Box 30, Prosser, WA 99350, (509) 786-2226; Vice. Pres, Wayne Robinson, 2210 E. Pioneer Ave., Puyallup, WA 98372; Sec., Nancy Stewart, 2400 21st Street, Sacramento, CA 95818, (916) 451-2337; Treas. Ron Neese, 711 College Street, Woodland, CA 95695, (916) 661-3659.

•Honey Industry Council of America. Pres., Binford Weaver, Rt. 1, Box 256, Navasota, TX 77868, (409) 825-2312; Sec., Bob Brandi, 1518 Paradise Lane, Los Banos, CA 93635, (209) 826-0921.

•Ladie's Auxiliary of ABF. Pres., Kathi Brandi, 1518 Paradise Lane, Los Banos, CA 93635; Vice-Pres., Jan Olson, 4532 Boone Ave., N., New Hope, MN 55428; Sec.-Treas., Judy Haefeli, 3927 N. Rd. 3 W, Monte Vista, CO 81144, (303) 852-3149; Historian, Marilyn King, 607 S. Fuller Drive, Indianapolis, IN 46241.

•National Honey Board. Chairman, Dan Hall, 421 21st St., #203, Longmont, CO 80501. FAX (303) 776-1177, Phone (303) 776-2337.

•Mid-U.S. Honey Producers Marketing Association. Pres., Gary Reynolds, Box 363, Concordia, KS 66901, (913) 243-3619; Vice-Pres., Bob Barnes, Dillion, MT 59725; Sec.-Treas., Glen Wollman, P. O. Box 458, Parker, SD 57053, (605) 297-4181.

•National Honey Packers & Dealers Association. Pres., Neil Miller, Miller Honey Farm, 1167 N. 600 W., Blackfoot, ID 83221; Vice-Pres., Robert Appel, Sunstar Food Inc., 118 Iowa Ave., Streator, IL 61364; Sec.-Treas., David McGinnis; Exec.-Sec., J. Douglas McGinnis, Tropial Blossom Honey Co., P. O. Box 8, Edgewater, FL 32032, (904) 428-9027.

•Professional Apiculturists Association. Pres., Eric Mussen, First Vice-Pres., Mark Sugden, Entomology Dept., University of Minnesota, St. Paul, MN 55108; Sec.-Treas., Malcolm T. Sanford, Entomology Extension Dept., University of Florida, Gainesville, FL 32611, (904) 392-1801.

•Southern States Beekeepers Federation. Pres., Paul Harrison, Vice Pres, Carol Booth; Recording Sec., Steve Forrest, Rt. 1, Box 135, Moravian Falls, NC 28654.

•The Canadian Honey Council. Pres., Dale Hansen, General Delivery, Farmington, B.C. VOC 1NO; Vice. Pres., Roger Congdon, R. R. #1, Cottam, Ontario NOR 1BO; Executive Member, Jean Marc Labonte, 530 Road Nault, Victoriaville, Quebec G6P 7R5; Sec. - Treas., Linda Gane, P. O. Box 1566, Nipawin, Sask, SOE 1EO. (306) 862-3011.

•Canadian Association of Professional Apiculturists. Pres., Don Dixon, 911 Norguay Bldg., Winnepeg, Manitoba R3C OP8; Vice.-Pres., Doug McCutcheon, 32916 Marshall Rd., Abbottsford, B. C. Canada V25 1K2; Sec.-Treas., Cynthia Scott-Dupre, Dept. of Environmental Biology, University of Guelph, Guelph, Ontario, Canada, N1G 2W1 (519) 824-4120.

•Agricultural Technical Institute, Beekeeping. Dr. James Tew, Wooster, Ohio 44691. 1-800-647-8283.

• International Organizations

•International Bee Research Association. David Francis, 18 North Road, Cardiff, CF1 3DY, UK. Telephone: (0222) 372409, Telex: 23152 monref G 8390.

•Apimondia. International Federation of Beekeepers' Associations — President, Raymond Borneck, Rue Du Creux, Montbarrey, France, 3y; General Secretary, 101 Corso Vittorio Emanuele Rome, Italy 00186, (6) 65-12286. Periodical: Apiacta (quarterly).

• Government Agencies

•USDA — Agricultural Research Service. National Program Staff, Dr. James E. Wright, Room 225, Bldg. 005, BARC-W, Beltsville, MD 20705. (301) 344-3301.

•Beneficial Insects Lab. Dr. John J. Drea, Rm. 100, Bldg. 476, BARC-East, Beltsville, MD 20705. (301) 344-2205.

•Honeybee Breeding and Genetics & Physiology Research Lab. Dr. Thomas E. Rinderer, Research Leader, 1157 Ben Hur Rd., Baton Rouge, LA 70820. (504) 766-6064.

•Agric. Research Service. Dr. Anita Collins, Research Leader, 509 W. 4th St., Weslaco, TX 78596. (512) 968-3159.

•Bee Biology & Systematics Laboratory. Dr. John Vandenberg, Laboratory Leader, Utah State University, Logan, Utah 84322-5310.

•Carl Hayden Bee Research Center. Dr. Eric H. Erickson, Center Director, 2000 E. Allen Road, Tucson, AZ 85719. (602) 629-6380.

•AMS - F & V (Agricultural Marketing Service, Fruit & Vegetable). Ronald L. Cioffi, Marketing Order Admin. Br., Washington, DC 20250. (202) 447-5697.

•Honey Market News. Linda Verstrate, USDA-AMS, Fruit & Vegetable Div., 2015 So. 1st St., Rm. 4, Yakima, WA 98903. (509) 575-2492.

•Price Support Program. Jane Phillips, Commodity Analysis Division, Agricultural Stabilization and Conservation Service, USDA, Washington, DC 20250. (202) 447-7602.

•Extension Service (Federal). Paul W. Bergman, Pesticide: Use & Impact Assessment, USDA, Washington, DC 20250. (202) 447-3511.

•Biosystematics Research Centre. Dr. R. J. T. Trottier, Director, Rm. B149, K. W. Neatby Building, Ottawa, Ontario, Canada K1A OC6. (613) 996-1665.

•Agriculture Canada.. Dr. D. L. Nelson, Dr. T. P. Liu and Dr. T. I. Szabo, Research Station, Research Branch, Agriculture Canada, P. O. Box 29, Beaverlodge, Alta., Canada TOH OCO. (403) 354-2212.

• National Organizations Dealing with Africanized Honey Bees

• United States Department of Agriculture (USDA)

Animal Plant Health Inspection Service (APHIS)

- Mr. Charles H. Bare
  6505 Belcrest Road
  PPQ APHIS
  Room 663, FC BG 1
  Hyattsville, MD 20785
- Mr. Ralph H. Iwamoto, Jr.
  APHIS USDA
  US Embassy Mexico City
  P. O. Box 3085
  Laredo, TX 78044

Agricultural Research Service (ARS)

- Dr. Ralph Bram
  NPL ARS
  Insects Affecting Man & Animals
  Room 211, B 005
  Beltsville, MD 20705

Federal Extension Service

- Dr. James E. Tew
  NPL, Apiculture
  Extension Service, USDA
  ATI / The Ohio State University
  Wooster, OH 44691

Office of Governmental and Public Affairs
14th & Independence Ave., SW
Room 406 - A
Washington, DC 20250

• The American Farm Bureau

- Ms. Ann Sorensen
  NER Div
  American Farm Bureau
  325 Touhy Avenue
  Park Ridge, IL 60068

• The American Beekeeping Federation

- Mr. Darrell Wenner
  Rt. 1, Box 284
  Glenn, CA 95943

• Regional Associations

ALASKA

- **COOK INLET BEEKEEPER ASSN.** — Fletcher Miller, P.O. Box 140173, Anchorage, 99514
- **INTERIOR AK BEEKEEPERS** — Stephen Peterson, 1153 Donna Dr., Fairbanks, 99712
- **KENAI BEEKEEPERS ASSC.** — Edmund Knutsen, P.O. Box 1525, Soldotna, 99669
- **SOUTH CENTRAL AK BEEKEEPERS** — Betty Rhodes, P.O. Box 141976, Anchorage, 99514

ALABAMA

- **ETOWAH CO BEEKEEPERS** — James Walker, 419 Cove Creek Rd., East Gadsden, 35903
- **JEFFERSON CO BEEKEEPERS** — Ms. Robert Musgrove, 3418 Venus Ln., Fultondale, 35068
- **MOBILE CO BEEKEEPERS** — Ben Cox, 7751 Prince James Dr., Mobile, 36619

ARKANSAS

- **CTL ARKANSAS BEEKEEPERS** — Bob Sterling, 17 N. Meadow Cliff, Little Rock, 72209
- **WESTERN ARKANSAS BEEKEEPERS** — Anson Gregory, 1520 N. 49th St., Fort Smith, 72904

ARIZONA

- **CTRL AZ BEEKEEPERS** — M. Kuzmik, 1544 W. 6 St.,Tempe, 85281
- **SABA** — Larry Zavala, 2882 W. Medici Dr., Tucson, AZ 85741

CALIFORNIA

- **ALAMEDA CO BEEKEEPERS ASSN** — C.C. Rubins, 1 Gable Ln., Lafayette, 94549
- **BEEKEEPERS ASSN, SO CA** — Richard Rosewitz, 18151 Campanario Dr., Rowland Heights, 91748
- **CALIFORNIA BEE BREEDERS** — M C West, 703 Apricot, Winters, 95697
- **HUMBOLDT BEEKEEPERS ASSN** — Bob Hitte, 44 Wagon Jack Lane, Arcata, 95521
- **LOS ANGELES CO BEEKEEPERS** — Matt Reese, 2980 Reposa Lane, Altadena, 91001
- **NEVADA COUNTY BEEKEEPERS** — P.O. Box 1262, Cedar Ridge, 95924
- **ORANGE COUNTY BEEKEEPERS** — Chuck Henry, 27311 Via Armistoso, Mission Viejo, 92708
- **SACRAMENTO AREA BEEKEEPERS** — William Taylor, 4821 Arboleda Dr., Fair Oaks, 95628
- **SAN FRANCISCO BEE CLUB** — Nash Khayat, 686 Corbett Ave., San Francisco, 94114
- **SAN FRANCISCO BEEKEEPERS** — Lenore Bravo, 47 Levant St., San Francisco, 94114
- **SAN FRANCISCO HOBBY BEEKEEPERS** — John McClure, 810 Gonzalez Dr., 2H, San Francisco, 94132
- **SONOMA CO BEE CLUB** — Chuck Sharp, 1246 Enos Ave., Sebastopol, 95472
- **VALLEY HONEY ASSN** — P.O. Box 1241, Stockton, 95201
- **VENTURA BEEKEEPERS** — Mary Eisman, P.O. Box 7554, Ventura, 93006

COLORADO

- **BOULDER CO BEEKEEPERS ASSN** — Lee Brown, 1431 Coring Place, Northglenn, 80233
- **NORTHERN CO BEEKEEPERS** — Michael Whiteside, 1541 W. Hilltop Dr., Loveland, 80537

CONNECTICUT

- **EASTERN CT BEEKEEPERS** — Charlene Fuller, P.O. Box 144, North Windham, 06256
- **HAMPDEN CO BEEKEEPERS** — Linda Canders, 108 S. Water St., Warehouse Point, 06088
- **WESTERN CT BEEKEEPERS ASSN** — Tom Mulrane, 22 Mt. Laurel La., Sandy Hook, 06842

DELAWARE

- **SUSSEX CO BEEKEEPERS** — Karen Hall, 10th & Arch St., Seaford, 19973

FLORIDA

- **BROWARD CO BEEKEEPERS** — Helena Brown, 3000 SW 26th Terr., Ft. Lauderdale, 33312
- **CENTRAL FL BEEKEEPERS** — Hazel Will, 1560 Mayfield Ave., Winter Park, 32789
- **ESCAROSO BEEKEEPERS ASSN** — Sylvia Bullard, 9801 Lyman Dr., Pensacola, 32514
- **INDIANA RIVER DIST BEEKEEPERS** — Sara Davis, 4111 Oleander Ave., Fort Pierce, 33450
- **LEE CO BEEKEEPERS ASSN** — W H Lohrey, 107 E Lake Dr., Lehigh Acres, 33936
- **N CENTRAL FL BEEKEEPRS** — Tom Cutts, 1741, NW 7th Ave., Gainesville, 32601
- **NE FL BEEKEEPERS** — Catherine Fleming, 3238 Bessent Rd., Jacksonville, 32218
- **ORANGE BLOSSOM BEEKEEPERS** — Martha Black, P.O. Box 317, Trilby, 34271
- **PALM BEACH CO BEEKEEPERS** — Rosa Durando, 10308 Heritage Farms, Lake Worth, 33463
- **POLK CO BEEKEEPERS** — Charles Moore, 149 Winston Ave., Lake Wales, 33853
- **SOUTH FL BEEKEEPERS** — Ken Tabler, 3821 SE 11th Ave., Cape Coral, 33904
- **SUB TROPICAL BEEKEEPERS** — Lorrain Mann, 15750 SW 217 Ave., Miami, 33187
- **TAMPA BAY BEEKEEPER ASSN** — Diane Cornwell, P.O. Box 5861, Sun City, 33571
- **TUPELO BEEKEEPERS** — Benita Wiggins, Rt. 5., Box 3908, Tallahassee, 32301
- **WEST CENTRAL FL BEEKEEPERS** — A. Murray, Rt. 3, Box 762-B, Summerfield, 32691

GEORGIA

- **ATHENS AREA BEEKEEPERS** — Ronald Carey, Rt. 1, Box 169, Hull, 30646
- **COASTAL EMPIRE BEEKEEPERS** — Alan Townley, 923 Dutchtown Rd., Savannah, 31406
- **MACON BEEKEEPERS** — G. S. Moon, P.O. Box 5153, Macon 31208
- **METRO ATLANTA BEEKEEPERS** — Edwin Trausneck, 690 Farrar Ct., Decatur, 30033
- **SPALDING CO BEEKEEPERS** — J R New, P.O. Box 1000, Griffin, 30223
- **WALKER CO BEEKEEPERS ASSN** — Ms. Louis Huggins, Rt.1, Rossville, 30741
- **WHITFIELD CO BEEKEEPERS** — M. B. Davis, 213 W. Gordon, Dalton, 30720

HAWAII

- **BIG ISLAND BEEKEEPERS** — P.O. Box 116, Hakalau, 96710

IOWA

- **CENTRAL IA HONEY ASSN** — Ed Zeiser, Rt. 10, Maxwell, 50161
- **IOWA HONEY PRODUCTS ASSOC** — Thomas Wood, 53 30th St., Des Moines, 50312

IDAHO

- **IDAHO BEEKEEPERS ASSOC** — Golden Millet, 1 Box 8 Bee, Marsing, 83639

ILLINOIS

- **COOK-DUPAGE BEEKEEPERS** — Pat Patterson, Rt. 3, Box 72, Aurora, 60506
- **CTL EASTERN IL BEE ASSOC** — Audrey Chapman, P.O. Box 291, Gifford, 61847
- **HEART OF IL BEEKEEPERS** — Robert DuBois, 423 N. Lawndale, Washington, 61571
- **IL VALLEY BEEKEEPERS** — John Stopa, 1831 Campbell, La Salle, 61301
- **ILLIANA BEEKEEPERS** — Damita Lewis, P.O. Box 801, Paris, 61944
- **LAKELAND BEEKEEPERS ASSOC** — Jackie Snyder, 1811 Grant St., Charleston, 61920
- **LINCOLNLAND BEEKEEPERS** — Melvin Kennerling, Rt. 12, Springfield, 62707
- **LOWER ILLINOIS VLY BEEKEEPERS** — Ray Colgan, RR1, Versaille, 62378
- **MISS VALLEY BEEKEEPERS** — Shirley Ginster, RR 7, #29 Hickory Grove, Quincy, 62301
- **NORTHERN IL BEEKEEPERS** — Bruce Mohnen, 3707 Young St., McHenry 60050
- **ROCK RIVER VALLEY BEEKEEPERS** — Ernest Holtz, 305 N. Horace Ave., Rockford, 61103
- **SANGAMON VALLEY BEEKEEPERS** — Lynn Oxendale, 864 W. Forest Ave., Decatur, 62521
- **SOUTHERN ILLINOIS BEEKEEPERS** — Richard Porter, 1003 Roberta Dr., Marion, 62959
- **SPOON RIVER VALLEY BEEKEEPERS** — Joan Block, RR5, Canton, 61520
- **ST CLAIR BEEKEEPERS ASSN** — Josephine Christ, 107 S. Pennsylvania, Beeleville, 62221
- **STATELINE BEEKEEPERS ASSN** — Nancy Ingram, 8384 N. Broadway, Apple River, 61001
- **TRI-COUNTY BEEKEEPER ASSN** — George Hankamer, 719 W. Monroe, Belleville, 62221
- **WABASH VALLEY BEEKEEPERS** — Beverly Tanner, Rt. 1, Box 50, Noble, 62868
- **WESTERN IL BEEKEEPERS** — Allan Benson, RFD 2, Aldeo, 61231

INDIANA

- **MICHIANNA BEEKEEPERS ASSOC** — Mary Whalen, 53952 CR 17, Bristol, 46507
- **NW INDIANA BEEKEEPERS** — Frank Feher, 307 Spectacle Dr., Valpraiso, 46383
- **RIVER VALLEY BEEKEEPERS** — David Maikranz, RR2, Box 64, Oakland City, 47660
- **TRI-STATE BEEKEEPERS ASSN** — John Bittner, 17700 Owensville Rd., Evansville, 47712
- **WHITE RIVER VALLEY BEEKEEPERS** — J. O. Michael, P.O. Box 172, Washington, 47501

KANSAS

- **FLINT HILLS BEEKEEPERS** — Ruth Taylor, 526 S. Union, Emporia, 66801
- **KANSAS HONEY PRODUCERS** — Duane Levin, Box 10, Stuttgart, 67670
- **NORTHEASTERN KS BEE ASSOC** — Robert Pemberton, 6614 Riverview, Kansas City, 66102

KENTUCKY

- **GREENUP CO BEEKEEPER ASSN** — Carl Crabtree, Argillite, 41121
- **MERCER CO BEEKEEPERS** — Jeff McNeese, 1182 Vanarsdell Rd., Harrodsburg, 40330
- **WHITLEY CO BEEKEEPERS** — Eddie Wells, 1917 Lake Ave., Corbin, 40701

LOUISIANA

- **ARK-LA-TEX BEEKEEPING** — Walter White, P.O. Box 78435, Shreveport, 71137
- **BEEKEEPERS OF SE LA** — 2229 Volpe Dr., Chalmette, 70043
- **CAPITAL AREA BEEKEEPERS** — David Ferguson, 3134 Quebec Dr., Baton Rouge, 70819
- **PROGRESSIVE BEEKEEPERS** — Ray Landry, 748 Malapart Rd. 11, Lafayette, 70577

MASSACHUSETTS

- **BARNSTABLE CO BEEKEEPERS** — Jean Kennedy, 575 Willow St., West Barnstable, 02668
- **BERKSHIRE CO BEEKEEPERS** — Suzanne Delesdernier, 203 Melbourne Rd., Pittsfield, 01201
- **BRISTOL CO BEEKEEPERS** — Joan Ready, 1651 Elm St., Dighton, 02715
- **ESSEX CO BEEKEEPERS ASSOC** — Ena Griswold, 166 Shute St., Everett, 02149
- **FRANKLIN CO MASS ASSN** — Alex Plante, Foxhill Rd., Bernardston, 01337
- **HAMPDEN CO BEEKEEPERS** — G. H. Hughes, Kline Rd., Southwick, 01077
- **HAMPSHIRE CO BEEKEEPERS** — R. Pelissier, 136 East St., So. Hadley, 01075
- **MA FEDERATION OF BEEKEEPERS** — Vitto Marrota, 28 Hamblin's Way, Marsten Mills, 02648
- **MERRIMACK VALLEY BEEKEEPERS** — Raymond Devanney, 26 Lawrence Rd., Tyngsboro, 01879
- **MIDDLESEX CO BEEKEEPERS** — Eugene Munn, 8 Hill Rd., Boxborough, 01719
- **NORFOLK CO BEEKEEPERS** — Paul Ares, 275 Massapoag Ave., Sharon, 02067
- **PLYMOUTH CO BEEKEEPERS** — Frederic Magee, 148 Turnpike St., West Bridgewater, 02379
- **WORCHESTER CO BEEKEEPERS** — Gertrude Mapplebeck, 217 Wildwood Ave., Worchester, 01603

MARYLAND

- **ALLEGHENY MOUNTAIN BEEKEEPERS** — Daniel Folk, 179 Mt. Pleasant St., Frostburg, 21532
- **ANNE ARUNDEL CO BEEKEEPERS** — Peter Lisko, 728 Springdale Ave., Annapolis, 21403
- **ASSN OF SOUTHERN MD** — Dwight Williams, Battle Crk. Cypress Swamp, Prince Frederick, 20678
- **BOWIE-UPPER MARLBORO BEEKEEPERS** — Daryl Haman, 10710 Bickford Ave., Clinton, 20735
- **CARROLL CO BEEKEEPERS** — Gary Wilmsen, 3601 Oxwed Court, Westminster, 21157
- **CENTRAL BEEKEEPERS ASSOC** — Layton Stamper, 2835 Scarff Rd., Fallston, 21047
- **CTL MARYLAND BEEKEEPERS** — Layton Stamper, 2835 Scarff Rd., Fallston, 21047
- **HAGGERSTOWN VALLEY APIAN SOC** — Gordon Davis, 25 E. Antietam St., Hagerstown, 21740
- **HOWARD CO BEEKEEPERS** — Huber Smutz, Jr., 799 Driver Rd., Marriottsville, 21104
- **MONTGOMERY CO BEEKEEPRS** — George Imirie, 12705 Circle Dr., Rockville, 20850
- **SUSQUEHANNA BEEKEEPERS** — Charles Filburn, 1707 Walters Mill Rd., Forest Hill, 21050

MAINE

- **DOWNEAST-ME ST BEEKEEPERS** — James Reed, RFD 1, Box 2625, Bar Harbor, 04609
- **TRI-COUNTY BEEKEEPERS** — Genevieve Delicata, RR1, Box 417, Stockton Springs, 04981

MICHIGAN

- **CHAR-EM BEEKEEPERS ASSOC** — Grace Baumgartner, P.O. Box 47, Oden 49764
- **CRANBROOK BEE CLUB** — Fritz Sanders, 29068 Lori, Livonia, 48154
- **HOLLAND AREA BEEKEEPERS** — John Kleis, 5914 Old Allegan Rd., Hamilton, 49419
- **JACKSON CO BEEKEEPER ASSN** — Kenneth Losey, 6962 Folks Rd., Horton, 49246
- **MACOMB CO BEEKEEPERS ASSN** — Ms. Kurt Ciper, 37477 Union Lake Rd., Rt. 4, Mount Clemens, 48043
- **SAGINAW BAY BEEKEEPERS** — John Kern 12740 E. Curtis, Frankenmuth, 48134
- **SOUTHEASTERN MI BEE ASSOC** — Roger Sutherland, 5488 Warren, Ann Arbor, 48105
- **SOUTHWEST MI BEEKEEPERS** — Christine Dahlke, 4908 Hillandale Rd., Sodus, 49126
- **SUPERIOR BEEKEEPERS ASSN** — Robert Smith, Barbeau, 49701

MINNESOTA

- **CENTRAL MN BEEKEEPERS ASSN** — Rt. 1, Box 45, Ponsford, 56575
- **LAKE REGION BEEKEEPERS,** — Russel Hofman, Richville, 56576
- **MN BEEKEEPERS ASSN** — Jack Thomsen, Rt. 1, Glenwood, 56334
- **MN HOBBY BEEKEEPERS ASSOC** — Russell Johnson, 23115 Variolite St., Elk River, 55330
- **MN HONEY PRODUCERS** — Paul Maassel, Rt. 4, Box 52, Moorhead, 56560
- **NO CENTRAL BEEKEEPER ASSN** — P.O. Box 294, Brainerd, 56401

MISSOURI

- **BOON REGIONAL BEEKEEPERS** — Louise Johnson, 1010 Eastwood Circle, Columbia, 65021
- **BUSHWACKERS BEEKEEPERS** — Charles Hinckley, Box 442, Nevada, 64772
- **CENTRAL MO BEEKEEPERS** — John Walther, 3026 Hogan Dr., Jefferson City, 65101
- **DALLAS CO BEEKEEPERS** — Fred Clayton, Box 54, Buffalo, 65622
- **EASTERN MO BEEKEEPER ASSN** — Carol Kaufmann, 3743 Druso, St. Louis, 63125
- **HONEY PRODUCERS** — Phyllis Bond, Rt. 1M, Box 46, Olean, 65064
- **JEFFERSON CO BEEKEEPERS** — James Bieg, Box 51, Hillsboro, 63050
- **LACLADE CO BEEKEEPERS** — Liz Gregory, Rt. 3, Box 45, Plato, 65552
- **LINCOLN CO BEEKEEPERS** — Margaret Hornburg, Rt. 1-A, Box 314, Hawk Point, 63349
- **LINCOLN CO BEEKEEPERS** — Margaret Hornburg, Rt. 1-A, Box 314, Hawk Point, 63349
- **LITTLE DIXIE BEEKEEPERS** — Don Collop, Rt. 2, Mexico, 65265
- **MID-MO BEEKEEPERS** — Keith Brady, 506 Woodland Dr., Rolla, 65401
- **MIDWESTERN BEEKEEPER ASSN** — Roger Nichols, 8754 E 83rd St., Raytown, 64138
- **MISSOURI VALLEY BEEKEEPERS** — Bill Kohne, Rt. 2, Box 43, Sullivan, 63080

- **NORTH MISSOURI BEEKEEPERS** — Ronald Whitacre, Box 33, Glenwood, 63541
- **OZARK BEEKEEPERS ASSOC** — Dan Kelly, Rt. 6, Box 610-I, Springfield, 65803
- **OZARK MOUNTAIN BEEKEEPERS** — Walter Hess, Star Rt. 4, Box 2173, Brauson, 65616
- **PRAIRIE CO BEEKEEPERS** — Virgina Hininger, Rt. 2, Box 56, Lamar, 64759
- **SOUTHWEST MO BEE ASSOC** — E. S. Haddock, Verona, 65769
- **TWO RIVERS BEEKEEPERS ASSN** — Synthia Bernstein, 641 Watkins Glen, St. Charles, 63303
- **WORTH CO BEEKEEPERS** — Floyd Rinehart, Rt. 1, Grant City, 64456

MONTANA

- **EASTERN MT BEEKEEPERS** — Evelyn Degenhart, 2547 Roundup Rd., RR 11, Billings, 59105

NEBRASKA

- **NORTHEAST NB BEEKEEPERS** — Elda Pfanstiel, RR 1, McLean, 68747
- **NB HONEY PRODUCERS** — Helen Madison, 110 West 6th St., Valentine, 69201

NORTH CAROLINA

- **ALAMANCE CO BEEKEEPERS** — W. Ronald Petree, 2872 S. NC 119, Mebane, 27302
- **ALBERMARLE REGIONAL BEE CLUB** — Wink Munden, 506 Hemlock Ave., Elizabeth City, 27909
- **ALLEGHANY CO BEEKEEPERS** — Bryon Woodruff, Rt. 1, Box 139, Glade Valley, 28627
- **BUNCOMBE CO BEEKEEPERS** — Jean Comyns, Rt. 2, Box 638, Asheville, 28805
- **BURKE CO BEEKEEPERS ASSN** — Rev L. N. Puette, Rt. 2, Box 958-A Connelly Springs, 28612
- **CABARRUS CO BEEKEEPERS** — Vernon Hathcock, Rt. 3, Box 139-B, China Grove, 28023
- **CARTERET CO BEEKEEPERS** — Harry Lockey, Jr., Rt. 2, Box 226, Newport, 28570
- **CASWELL CO BEEKEEPER ASSN** — Paul Myers, Rt.1, Box 133, Blanch, 27212
- **CATAWBA VALLEY BEEKEEPERS** — Jim Peeler, Rt. 11, Box 397, Hickory, 28601
- **CHATHAM CO BEEKEEPER ASSN** — Judy Ellen Pic, Rt. 1, Box 309, Pittsboro, 27312
- **CHOANOKE BEEKEEPERS ASSOC** — Frank Stevenson, 301 E. Broad St., Murfreesboro, 27855
- **COLUMBUS-BRUNSWICK BEEKEEPERS** — Sylvia Martin, Rt. 2, Box 306, Chadbourn, 28431
- **CUMBERLAND CO BEEKEEPERS** — Berline Beal, 2602 Stonehaven Dr., Fayetteville, 28306
- **DAVIE CO BEEKEEPERS ASSN** — Dorris Dillon, Rt. 3, Box 590, Mocksville, 27028
- **DURHAM CO BEE CLUB** — Ellis Selph, 2502 Winton Rd., Durham, 27707
- **EDGECOMBE CO BEEKEEPERS** — Peggy Weatherford, Rt. 2, Box 162, Battleboro, 27809
- **FORSYTH CO BEEKEEPERS ASSN** — Naomi Sloam, 1400 Demetrias Dr., Winston Salem, 27103
- **GASTON CO BEEKEEPERS ASSN** — Harold Cline, 840 Churchill Dr., Gastonia, 28052
- **GREENSBORO BEEKEEPERS** — Henry Moon, 2416 Wright Ave., Greensboro, 27403
- **GUILFORD CO BEEKEEPERS** — Edward Snyder, 5400 Bosher Lake Dr., Mcleansville, 27301
- **HAYWOOD CO BEEKEEPERS** — Cormell Hollingworth, 1322 Allens Creek, Waynesville, 28786
- **HENDERSON CO BEEKEEPERS** — Bitton Allison Jr., Horse Shoe, 28742
- **HOKE CO BEEKEEPERS ASSOC** — Betty Freeman, Rt. 2, Box 527, Raeford, 28376
- **IREDELL CO BEEKEEPERS** — Bob Kale, Rt. 2, Box 63, Catawba, 28609
- **JACKSON CO BEEKEEPERS ASSN** — Robert Anders, P.O. Box 8, Cullowhee, 28723
- **JOHNSTON CO BEEKEEPERS** — R. G. Adams, 507 Morris Ave., Benson, 27504
- **LEE CO BEEKEEPERS ASSOC** — W. Lynn Spivey, 120 E. Weatherspoon St., Sanford, 27330
- **LENOIR CO BEEKEEPERS ASSN** — H. C. Hoffman, Rt. 7, Box 316, Kinston, 28501
- **LINCOLN CO BEEKEEPERS ASSN** — Victor Rudisoll, 926 E. Park Dr., Lincolnton, 28092
- **MACKLENBURG CO BEEKEEPERS** — Gene Shannon, 838 Burnley Rd., Charlotte, 28201
- **MITCHILL CO BEEKEEPERS ASSN** — T. V. Hall, Rt. 2, Box 1225, Spruce Pine, 28777
- **MONTGOMERY CO BEEKEEPERS** — Archie Craven, Rt. Box 231, Mount Gilead, 27306
- **NEW HANOVER CO BEEKEEPERS** — Jim Tyer, Rt. 1, Box 567, Wilmington, 28405
- **ONSLOW CO BEEKEEPERS** — Maurice Cook, Rt. 4, Box 167, Jacksonville, 28540
- **ORANGE CO BEEKEEPERS ASSOC** — Matt Thompson, 103 Lilac Dr., Carrbord, 27514
- **PAMLICO CO BEEKEEPERS** — Susan Herring, 307 Tantara Ct., Fayetteville, 28301
- **PITT CO BEEKEEPERS ASSOC** — Scott Flanagan, 501 Grimmersburg St., Farmville, 27828
- **RANDOLPH CO BEEKEEPERS** — H. J. Weiler, Jr., 1239 Thayer Dr., Asheboro, 27203
- **RICHMOND CO BEEKEEPERS** — Ruth Barbee, Rt. 3, Box 368-B, Rockingham, 28379
- **ROBESON CO BEEKEEPER ASSN** — D. S. Gillispie, 1905 Rowland Ave., Lumberton, 28358
- **ROCKINGHAM CO BEEKEEPERS** — Ms. B. P. Fox, 102 North 7th Ave., Mayodan 27027
- **ROWAN CO BEEKEEPERS ASSN** — James Ijames, 211 W McCubbins St., Salisbury, 28144
- **RUTHERFORD CO BEEKEEPERS** — Arthur Stchley, Rt. 3, Rutherfordton, 28139
- **SAMPSON CO BEEKEEPERS** — Florence Beretich, Rt. 3, Box 14, Clinton, 28328
- **SURRY CO BEEKEEPERS ASSN** — Z. Wayne Thompson, Rt. 1, Box 179, Elkin, 28621
- **SWAIN CO BEEKEEPING CPTR** — M. G. Sanderson, Rt. 2, Box 608, Bryson City, 28713
- **TRANSYLVANIA CO BEEKEEPERS** — James Bales, Star Rt. Box 580, Rosman, 28772
- **TRI-CO BEEKEEPERS ASSOC** — Nate Salsbury, 608 Madame Moore's Lane, New Bern, 28560
- **WAKE CO BEEKEEPERS ASSOC** — Stanley Hodge, 1314 Dowling Rd., Raleigh, 27610
- **WATAUGA CO BEEKEEPERS** — Alicia Breton, P.O. Box 13, Todd, 28684
- **WAYNE CO BEEKEEPERS ASSOC** — Louise Sasser, 108 E. Westwood Dr., Goldsboro, 27530
- **WILKES CO BEEKEEPERS ASSN** — Grant Miller, Rt. 2, Box 321-B, Millers Creek, 28651
- **WILSON CO BEEKEEPERS ASSN** — Harvey Denton, Rt. 2, Box 50-B, Bailey, 27087

NEBRASKA

- **EASTERN NE HONEY PRODUCERS** — Darrel Abele, 7232 Webster St., Lincoln, 68152
- **NE HONEY PRODUCERS** — Helen Madison, 110 West 6th St., Valentine, 69201
- **NORTHEAST NE BEEKEEPERS** — Elda Pfanstiel, RR 1, McLean, 68747

NEVADA

- **NORTHERN NV APICULTURE** — Bill Goff, 14060, Edmands Dr., Reno, 89511
- **SIERRA BEE BUZZ** — Bob Weiser, 5595 Lil Abner, Sun Valley, 89531

NEW HAMPSHIRE

- **MERRIMACK VLY BEEKEEPERS** — Kenneth Weyant, 3 Hoodcraft Dr., Derry, 03038
- **PAWTUCKAWAY BEEKEEPERS** — Dr. Ethan Howard, 7 Ordway Land, RR 16, Bow, 03301
- **SEACOAST BEEKEEPERS ASSN** — Richard Higgins, RFD 2, Box 369, Pittsfield, 03625
- **WAINER BEEKEEPERS CLUB** — Leonard Rowell, RFD 2, Wainer, 03278

NEW JERSEY

- **CENTRAL JERSEY BEEKEEPERS** — Inga Littig, P.O. Box 306, Lakehurst, 08733
- **ESSEX CO BEEKEEPERS SOC** — Marion Chandler, 85 Deerfield Rd., W. Caldwell, 07006
- **MORRIS CO BEEKEEPERS** — Ann Tischbein, 59 Haas Rd., Basking Ridge, 07920
- **NE BEEKEEPERS ASSOC, NJ** — Jeannette Stoel, 519 Farview St., Ridgewood, 07450

NEW YORK

- **CHAUTAUQUA CO BEEKEEPERS** — John Kost, 1408 Bunce, Frewsburg, 14738
- **LONG ISLAND BEEKEEPERS** — Ginny Lackey, 1260 Walnut Ave., Bohemia, 11716
- **MID-YORK BEEKEEPERS ASSN** — Richard Wood, Rt. 4, Soule Rd., Rome, 13440
- **MONROE CO BEEKEEPERS** — Gale Miller, 389 Dewey St., Churchville, 14428
- **S ADIRONDACK BEEKEEPERS** — Donald Tooker, RD 8, Saratoga Springs, 12866
- **SOUTHEASTERN BEEKEEPERS CLUB** — Kathleen Smith, 239 Wisner Ave., Middletown, 10940
- **SOUTHERN TIER BEEKEEPERS** — H. W. Shoemaker, 3 Spring Lane, Binghamton, 13903
- **STEUBEN CO HONEY BEE ASSN** — Charlotte Harrison, RD 4, Bath, 14810
- **SUFFOLK CO BEE CLUB** — H. D. Wells, 24 River Ave., Riverhead, 11901
- **WESTERN NY HONEY PRODUCERS** — Sally Potczak, 541 Bell Rd., Corfu, 14036

OHIO

- **BUTLER CO BEEKEEPERS** — Karen Rupp, 6483 Layhigh Rd., Okeana, 45053
- **CARROLL CO BEEKEEPERS** — Kim Pallaye, 4107 Ivory Rd., NW, Carrollton, 44615
- **CENTRAL BEEKEEPERS ASSN** — Vernon Chute, 1635 N. Hague Ave., Columbus, 43204
- **CENTRAL OH BEEKEEPERS** — David Casdorph, 4111 Maize Rd., Columbus, 43224
- **CLARK CO BEEKEEPERS** — Rolland Anderson, 1312 N Lowry Ave, Springfield, 45504
- **COLUMBIANA & MAHONING CO BEEKEEPERS** — Rhoda Reynolds, 2477 Columbiana Rd., New Springfield, 44443
- **COLUMBIANA CO BEEKEEPERS** — Grace Hamilton, Rt. 1, Lisbon, 44432
- **CUYAHOGA CO BEEKEEPERS** — John Dernar, 7556 York Rd., Parma, 44130
- **FRANKLIN CO BEEKEEPERS** — Vera Gorochow, 3563 Byers Rd., Delaware, 43015
- **GEAUGA BEEKEEPERS ASSN** — Lynn Hershberger, P.O. Box 334, Burton, 44021
- **GREENE CO BEEKEEPERS** — O. K. Simison, Rt. 1, Spring Valley, 45370
- **GUERNSEY CO BEEKEEPERS** — Neal Murdock, 69615 Old 21 Rd., Cambridge, 43725
- **HIGHLAND CO BEEKEEPERS** — Cora Prye, 7926 Wright Rd., Hillsboro, 45133
- **HOCKING CO BEEKEEPERS** — Annette McClain, 20193 St. Rt. 328, New Plymouth, 45654
- **JEFFERSON CO BEEKEEPERS** — John Kellis, 100 Hidden Wood Dr., Steubenville, 43952
- **KNOX CO BEEKEEPERS ASSN** — Harold Bower, 14258 Beckley Rd., Mt. Vernon, 43050
- **LAKE CO BEEKEEPERS ASSN** — Russell Dodge, Box 36, Southern St., Unionville, 44088
- **LAWRENCE CO BEEKEEPERS** — Maxine Bowman, Rt. 3, Box 191, Ironton, 45638
- **LOGAN CO BEEKEEPERS ASSN** — Ms James Eaton, Rt. 1, Mount Victory, 43340
- **LORAIN CO BEEKEEPERS ASSN** — Melvin Thompson, 1741 Grafton Rd., Elyria, 44039
- **MARION CO BEEKEEPERS ASSN** — Brent Willis 289 Fairview St., Marion, 43302
- **MEDINA CO BEEKEEPERS** — Vince Yambrovich, 9661 Stone Rd., Litchfield, 44253

- **MIAMI CO BEEKEEPERS** — Sara Newbright, 4555 Walnut Gr. Rd., Troy, 45373
- **MID OHIO VALLEY BEEKEEPERS** — Diane Lorenz, Rt. 3, Stockport, 43787
- **MID-OHIO VALLEY BEEKEEPERS** — Janet Davis, Rt. 1, Box 160, Waterford, 45786
- **MONTGOMERY CO BEEKEEPERS** — Jean Allen, 828 Allenhurst Ave., Vandalia, 45377
- **MORROW CO BEE ASSN** — Rebecca Gilliland, 1299 Nancy Lane, Columbus, 43227
- **MUSKINGUM CO BEEKEEPERS** — Marilyn Dailey, 1075 Rix Mills Rd., New Concord, 43762
- **NW OHIO BEEKEEPERS ASSN** — Leroy Shoultz, 233 Elm St., Findlay, 45840
- **PORTAGE CO BEEKEEPERS** — Kathleen Zizka, 9177 Asbury Rd., Mantua, 44255
- **RICHLAND CO BEEKEEPERS** — Eldon Heck, 75 Park Village, Shelby, 44875
- **ROSS CO BEEKEEPERS ASSN** — Fred Weaver, 27 Courtland Dr., Chillicothe, 45601
- **SCIOTO CO BEEKEEPERS** — Judy Bradbury, Rt. 2, Minford, 45653
- **SOUTHWESTERN OH BEE ASSN** — Don Cooke, 731 Miami Ave., Terrace Park, 45174
- **STARK CO BEEKEEPERS** — Mary Furlong, 178 Wall Pl., SE, Massillon, 44646
- **SUMMIT CO BEEKEEPERS** — Barbara Perry, 2994 Kendall Rd., Akron, 44321
- **TRI-COUNTY BEEKEEPERS ASSN** — Jim Kinney, 1560 Woodcrest, Wooster, 44691
- **TRUMBULL CO BEEKEEPERS** — Joann Elmore, 9244 Ward, North, Kinsman, 44428
- **TUSCARAWAS CO BEEKEEPERS** — Helen Ott, 28342 Cr. 281, Newcomerstown, 43832
- **WARREN CO BEEKEEPERS** — Oscar Brown, 7154 Hopkins Rd., Maineville, 45039

OKLAHOMA

- **FOUR STATE BEEKEEPERS ASSN** — Louise Bean, Rt. 6, Box 467, Grove, 74344
- **INDIAN NATION BEEKEEPERS** — Wayne Richison, 2700 Jefferson Court, Muskogee, 74403
- **NE OKLAHOMA BEEKEEPERS** — James Grayson, Rt. 1, Box 189B, Owasso, 74055
- **RED RIVER BEEKEEPERS ASSN** — Louis Stallings, HC 70, Box 12, Boswell, 74727
- **SE OKLAHOMA BEEKEEPERS** — Dorothy Grigsby, Rt. 1, Box 915, Broken Bow, 74736

OREGON

- **COOS CO BEEKEEPERS** — Walt Price, P.O. Box 217, Cogville, 97423
- **LANE CO BEEKEEPERS** — James Sheridan, 1885 Norkenzie Rd., Eugene, 97401
- **TUALATIN VALLEY BEEKEEPERS** — George Robins, 1255 SW Taylors Ferry, Portland, 97219

PENNSYLVANIA

- **BUCKS CO BEEKEEPERS** — Eugene Pester, 512 Feaster Ave., Feasterville, 19048
- **CENTRAL WSTRN PA BEE ASSN** — Nancy Paffenroth, Unionville Rd., Evans City, 16033
- **CLARION CO BEEKEEPER ASSN** — R. W. McHenry, Front St., Box 176, Sligo, 16255
- **DAUPHIN CO BEEKEEPERS ASSN** — Donald Zimmerman, 6249 Cider Press Rd., Harrisburg, 17111
- **FRANKLIN CO BEEKEEPERS** — Mark Burkholder, 191 Franklin Farms Lane, Chambersburg, 17201
- **LACKAWANNA CO BEEKEEPERS** — Esther Ziegler, Rt. 1, Dalton, 18414
- **LEHIGH VALLEY BEEKEEPERS** — Richard Olson, RD 1, Box 296M, Germansville, 18053
- **LUZERNE CO BEEKEEPERS** — Ernest Young, 347E Noble St., Naticoke, 18634
- **LYCOMING CO BEEKEEPERS** — Fred Robinson, 1730 Ravine Rd., Williamsport, 17702
- **MONTGOMERY CO BEEKEEPERS** — Robert Bitterman, 3 Allendale Rd., Norristown, 19401
- **NORTHWESTERN PA BEEKEEPERS** — Jeff Allio, Rt. 3, Nickleplate Rd., Cochranton, 16314
- **POTTER CO BEEKEEPERS ASSN** — Lloyd Tyler, Rt. 3, Coudersport, 16915
- **SCHUYKILL CO BEEKEEPERS** — Richard Malick, 220 Cherry Dr., Wyomissing, 19610
- **VENANGO CO BEEKEEPERS** — Ms. Ernest Montogomery, Rt. 4, Box 14, Franklin, 16323
- **WAYNE CO BEEKEEPERS ASSN** — Evelyn Merring, RD 6, Box 6601, Lake Ariel, 18436
- **YORK CO BEEKEEPERS** — William Spahr, Rt. 1, Dover, 17315

RHODE ISLAND

- **RHODE ISLAND BEEKEEPERS** — Elizabeth Latham, 9 Fountain Spring Lane, Johnston, 02919

SOUTH CAROLINA

- **MID-STATE BEEKEEPING ASSN** — Jane Paradeses, 340 Bradley Rd., West Columbia, 29169
- **YORK CO BEEKEEPERS ASSN** — Ms. I. T. Hepp, Leslie Highway, Rock Hill, 29732

SOUTH DAKOTA

- **BROWN CO BEEKEEPERS** — Eva Wilson, 1703 Royal Rd., Aberdeen, 57401

TENNESSEE

- **ANDERSON CO BEEKEEPERS** — Ms. William Whitters, 15 Newhope Lane, Oak Ridge, 37830
- **BEEKEEPERS OF TN** — Howard Kerr, Rt. 11, Box 7, Maryville, 37801
- **BLOUNT CO BEEKEEPERS** — John Gee, Rt. 2, Box 209, Friendsville, 37737
- **CHATTANOOGA AREA BEEKEEPERS** — Joe Kilpatrick, 834 Runyan Dr., Chattanooga, 37405
- **CHEROKEE BEEKEEPERS ASSN** — Ms. David Robinson, Rt. Box 606, Decatur, 37322
- **COLUMBIA BEEKEEPERS** — Lona Vaughn, Rt. 7, Box 123, Columbia, 38401
- **CUMBERLAND AREA BEEKEEPERS** — Ms. Lorraine Geer, Rt. 9, Box 146, Sparta, 38583
- **DICKSON CO AREA BEEKEEPERS** — Elaine Smith, Rt. 1, Box 74c, Cumberland Furnace, 37051
- **DUCK RIVER BEEKEEPERS ASSN** — Elaine Holcombe, P.O. Box 303, Shelbyville, 37160
- **FRANKLIN CO BEEKEEPERS** — James Duncun, Rt. 2, Winchester, 37398
- **HAMILTON CO BEEKEEPERS** — Ms. J. D. Humberd, 8528 East Brainerd Rd., NE, Chattanooga, 37421
- **HENDERSON CO BEE ASSN** — E. G. Woody, Scotts Hill, 38374
- **JACKSON CO BEE ASSN** — R. C. Smith, Gainesboro, 38562
- **KNOX CO BEEKEEPERS ASSN** — Dan Donaldson, 3832 Calaford Dr., Knoxville, 37918
- **LAWRENCE CO ASSOC** — Ralph Ring, Lawrenceburg, 38464
- **LEWIS CO BEEKEEPERS** — Allen Martin, RR 1 Box 321-E, Hohenwald, 38462
- **LINCOLN CO BEEKEEPERS** — Margaret Jennings, Rt. 2, Fayetteville, 37334
- **LOUDON CO BEEKEEPERS** — Jim Goodman, Rt. 4, Box 217A, Lenoir City, 37771
- **MCMINN CO BEEKEEPERS ASSN** — R. D. Malone, Lake View Farm, Niota, 37826
- **MEMPHIS AREA BEEKEEPERS** — Dean Bush, 1948 Prado Ave., Memphis, 38116
- **MONROE CO BEEKEEPERS ASSN** — E. E. Hagler, Madisonville, 37354
- **NASHVILLE AREA BEEKEEPERS** — Allan Davis, 137 Spring Valley Rd., Nashville, 37214
- **OVERTON CO BEE ASSN** — H. B. Garrison, Livingston, 38570
- **SEVIER CO BEEKEEPERS ASSN** — Harry Yarnell, P.O. Box 354, Seymour, 37265
- **STONES RIVER BEEKEEPERS** — Raleigh Marlin, Rt. 1, Box 230, Christiana, 37057
- **TIPTON CO BEE ASSN** — Ira Sellers, Covington, 38019
- **TN HONEY PRODUCERS/PACKERS** — Charles Neal, 7525 Georgetown Rd., Ooltewah, 37363
- **TRI-CITY BEEKEEPERS ASSN** — John Frey, Rt. 4, Big Ridge Rd., Kingsport, 37660
- **UNICOI CO BEE ASSN** — Enloe Hensley, Rt. 2, Erwin, 37650
- **WASHINGTON CO BEEKEEPERS** — K. Saylor, Rt. 2, Box 94, Jonesboro, 37659
- **WEAKLEY CO BEE ASSN** — A. M. Walker, Dresden, 38225
- **WILSON CO BEEKEEPERS ASSN** — Felix Preston, Rt. 7, Box 104, Lebanon, 37087

TEXAS

- **ALAMO AREA BEEKEEPERS ASSN** — Eva Pireto, 6418 Redbird Lane, San Antonio, 78240
- **ANDERSON CO BEEKEEPERS** — Tony Gunnels, 208 Fifth St., Palestine, 75801
- **ANGELINA ASSN** — Lynn Wilkerson, Rt.. 1, Box 361B, Dibold, 75941
- **AUSTIN AREA BEEKEEPERS** — Gary Hallock, 1124-A Clayton Lane, Austin, 78723
- **BRAZOS VALLEY ASSN** — John Pullen, Rt. 3, Box 398, College Station, 77841
- **CAPITOL AREA BEEKEEPERS** — A. J. Adair, 1507 Summit St., Austin, 78741
- **CENTRAL TX BEEKEEPERS** — Ty Simpson, 616 N. Beal, Belton, 76513
- **COASTAL BEND BEEKEEPERS** — Mrs. G. W. Wilson, 4109 Lowman St., Corpus Christi, 78411
- **COLLIN CO HOBBY BEEKEEPERS** — Marcia Earl, 3119 Berkshire, Mesquite, 75150
- **CONCHO VALLEY ASSN** — Travis Lane, 6427 Goodland Loop, San Angelo, 76901
- **EAST TEXAS ASSOCIATION** — Dick Counts, Box 2014, Tyler, 75710
- **EAST TEXAS BEEKEEPERS ASSN** — Harold Woolard, Rt. 1 Box 20, Edgewood, 75117
- **EL PASO ASSN** — Ray Pierce, 1616 James Chisum, El Paso, 79925
- **ERATH COUNTY ASSN** — Carroll Cawyer, 1433 No. Dale, Stephenville, 76401
- **FORT BEND ASSN** — Pat Westmoreland, P.O. Box 178, Fulshear, 77441
- **GALVESTON CO ASSN** — Barbara Erwin, 2625-30 Ave., N., Texas City, 77590
- **GOLDEN TRIANGLE ASSN** — Luther Simmons, 3705 Buffalo Circle, Beaumont, 77703
- **HARNS CO BEEKEEPERS** — Bonnie Hamala, 5623 Berry Creek, Houston, 77017
- **HARRIS CO ASSN** — Herbert Barrier, Rt. 3, Box 3385, Pearland, 77581
- **HOUSTON BEEKEEPERS ASSN** — Don Lopshire, P.O. Drawer 35319, Houston, 77235
- **MONTGOMERY CO BEEKEEPERS** — Juanita Stedman, P.O. Box 299, Spring, 77383
- **NORTH CTRL TX BEEKEEPERS** — Virgil Woodfin, 200 S. Park, Iowa Park, 76367
- **NORTH HARRIS CO ASSN** — John McCall, 5025 Hartwick St., Houston, 77093
- **PERMIAN BASIN ASSN** — James Brittingham, 2312 North Adams, Odessa, 79761
- **RED RIVER VALLEY ASSN** — Benny Watson, 1952-A Hines, Wichita Falls, 76303
- **RIO GRANDE VALLEY ASSN** — Ben Gonzales, P.O. Box 108, Weslaco, 78596
- **SOUTH PLAINS BEEKEEPERS** — James Colson, P.O. Box 2247, Lubbock, 79408
- **TEXAS HONEY CO-OP** — P.O. Box 14292, San Antonio, 78214
- **TEXOMA ASSOCIATION** — Russell Green, P.O. Box 164, Ector, 75439

- **TRINITY VALLEY ASSN** — Cynthia House, 103 Forest Brook Dr., Red Oak, 75154
- **VICTORIA CO ASSN** — Wayne Smith, Rt. 4, Cuero Hwy, Victoria, 77904
- **WALKER CO BEEKEEPERS** — Steve Laube, P.O. Box 7129, Huntsville, 77342
- **WALKER CO BEEKEEPERS** — Steve Laube, P.O. Box 7129, Huntsville, 77342
- **WASHINGTON CO ASSN** — E. C. Lemke, Rt. 4 Box 47B, Brenham, 77833
- **WILLIAMSON CO ASSN** — Mary Bost, Rt. 3, Box 60, Georgetown, 78626

UTAH

- **WASATAH BEEKEEPERS ASSN** — Gerri Withers, 8349 S. 100 E., Sandy, 84070

VIRGINIA

- **BANV** — William Syrett, 5230 Oldcastle Lane, Springfield, 22151
- **BLUE RIDGE BEEKEEPERS ASSN** — Ms. Lee Bristor, 1229 McDowell Ave., NW, Roanoke, 24012
- **CENTRAL VA BEEKEEPERS** — M. D. Brown, 2700 Mountain Rd., Glen Allen, 23060
- **CNTL VA BEEKEEPERS ASSN** — David Schumaker, Rt. 2, Box 530, Scottsville, 24590
- **GLOUCESTER BEEKEEPERS ASSN** — Ms. Carmen Stanford, Rt. 4, Box 2825, Hwy. 17, Glocester, 23061
- **GOOCHLAND BEEKEEPERS ASSN** — A. L. Hollins, Box 218-A, Sandy Hook, 23153
- **HALIFAX BEEKEEPERS ASSN** — Virginia Buchanan, Rt. 3, Box 14, Halifax, 24558
- **LOUDOUN BEEKEEPERS ASSN** — Richard Hays, Sr., P.O. Box 1030, Purcellville, 22132
- **MOUNTAIN EMPIRE BEEKEEPERS** — C. W. Nye, P.O. Box 582, Dublin, 24084
- **NASA-LANGLEY APIC CLUB** — Mary Ward, P.O. Box 712, Gloucester Point, 23062
- **NORTHERN PIEDMONT BEEKEEPERS** — Barbara Dennis, Rt. 1, Box 570, Amissville, 22002
- **NORTHERN PIEDMONT BEEKEEPERS** — Tom Ragsdale, P.O. Box 24, Orange, 22960
- **NORTHERN VA BEEKEEPERS** — Pearl Liles, 2451 S. Culpeper St., Arlington, 22206
- **PIEDMONT BEEKEEPERS ASSN** — Ms. A. A. Blanks, Rt. 1, Long Island, 24569
- **POWHATAN BEEKEEPERS ASSN** — Robert Taylor, 4991 Old Buckingham Rd., Powhatan, 23139
- **PRINCE WILLIAM BEEKEEPERS** — Jean Chitren, 15250 Dumfries Rd., Manassas, 22111
- **RICHMOND BEEKEEPERS ASSN** — Gary Morgan, 8207 Westmeath Lane, Richmond, 23227
- **SHENANDOAH VLY BEEKEEPERS** — William Smoot, IV, Star Route B, Box 109, Staunton, 24401
- **SOUTHWEST PIEDMONT BEEKEEPERS** — Williard Van Sickle, 406 Rives Rd., Martinsville, 24112
- **TIDEWATER APIC FOUNDATION** — Anthony Moll, Rt. 2, Box 189, Newport, 24128
- **TIDEWATER BEEKEEPERS ASSN** — Clarise Hennig, 1701 Cromwell Dr., Norfolk, 23509
- **TRI-CITY BEEKEEPERS ASSN** — Stanley Holmes, 4800 East Gurney Ct., Richmond, 23237
- **VA COMMERCIAL BEEKEEPERS ASSN** — M. C. Ludlum, 1112 Pierce St., Lynchburg, 24501

VERMONT

- **BENNINGTON CO BEEKEEPERS** — J. Ash, P.O. Box 723, Bennington, 05201
- **NORTHERN BERKSHIRE BEEKEEPERS** — Janice Pratt, P.O. Box 329, Pownal, 05261
- **VERMONT HONEY PROMOTION** — Pete Genier, RFD 1, Fair Haven, 05743

WASHINGTON

- **CENTRAL VALLEY BEEKEEPERS ASSN** — Rod Jackson, 18 W. Washingotn Ave., SP, Yakima, 98903
- **CLARK CO BEEKEEPERS ASSN** — Helen Akerill, 14216 NE 39th St., Vancouver, 98662
- **COLUMBIA BASIN BEEKEEPERS** — Meril Peterson, 1305 W. 42 Ave., Kennewick, 99336
- **COWLITZ CO BEEKEEPERS ASSN** — Eva Davis, 3956 Columbia Hts Rd., Longview, 98632
- **ISLAND EMPIRE BEEKEEPERS** — Ms. Rae Bateman, 12018 E. Boone, Spokane, 99206
- **LEWIS CITY BEEKEEPERS ASSN** — Jim Townsend, P.O. Box 245, Napavine, 98562
- **MT BAKER BEEKEEPERS ASSN** — Glenn Titus, 322 S. Forrest St., Birmingham, 98225
- **NORTHWEST DIST BEEKEEPERS** — Jean Scherer, 5300 Menzel Lake Rd., Granite Falls, 98252
- **OLYMPIA BEEKEEPERS ASSN** — Gene Little, 4539 Shincke Rd., SE, Olympia, 98506
- **PALOUSE HILLS BEEKEEPERS** — Ed Friis, W. 125 Main St., Pullman, 99163
- **PIERCE CO BEEKEEPERS** — Rollin Morford, 1009 38th St., Gig Harbor, 98335
- **PUGET SOUND BEE ASSN** — Merrill Kuehn, 17333 Fourth, SW, Seattle, 98166
- **SKAGIT VALLEY BEEKEEPERS** — Dottie Burr, 1101 Peacock Lane, Burlington, 98233
- **STANWOOD-CAMINO BEEKEEPERS** — Dave Alexander, 1910 98th St., NW, Marysville, 98270
- **VASHON ISLAND BEEKEEPERS** — Miriam Bishop, Rt. 2, Box 558, Vashon Island, 98070
- **WALLA WALLA BEEKEEPERS** — Bill Strauser, P.O. Box 991, Walla Walla, 99362
- **WHIDBEY ISLAND BEEKEEPERS** — Jim Short, P.O. Box 535, Coupeville, 98239

WISCONSIN

- **BARRON CO BEEKEEPERS** — Kathryn Mansfield, Rt. 1, Box 227, Weyerhauser, 54895
- **BROWN CO BEEKEEPERS** — Thomas Cashman, 1415 E. Mason St., Green Bay, 54301
- **CHIPPEWA & EAU CLAIRE BEEKEEPERS** — Fern Eggen, Rt. 7, Box 198, Chippewa Falls, 54729
- **DANE CO BEEKEEPERS** — Earl Blizard, 119 S. Main St., Verona, 53593
- **DODGE CO BEEKEEPERS** — Vernon Lovejoy, Rt. 1, Waupun, 53963
- **JEFFERSON CO BEEKEEPERS** — Franklin Borth, N. 1605, Watertown, 53094
- **MANITOWOC CO BEEKEEPERS** — Ms. Gerald Mack, Rt. 2, Box 96, Reedsville, 54230
- **MARATHON CO BEEKEEPERS** — Ms. Albert Sahr, 1901 E. Wausau Ave., Wausau, 54401
- **OTAGAMIE CO BEEKEEPERS** — Linda Anderson, Rt. 4, Sunset Lane, New London, 54961
- **OZAUKEE-WASHINGTON CO BEEKEEPERS** — Ms. Agnes Curry, P.O. Box 391, West Bend, 53095
- **POLK-BURNETT BEEKEEPERS** — Phillip Larson, RR 2, Clayton, 54004
- **RACINE-KENOSHA CO BEEKEEPERS** — Carolyn Fanelli, W.150 S. 6959 Cornell Cir., Muskego, 53150
- **ROCK CO BEEKEEPERS** — Linda Hauri, Rt. 2, Box 32, Beloit, 53511
- **RUSK CO BEEKEEPERS** — Elenor Albrecht, Rt. 1 Box 214, Glen Flora, 54526
- **SAUK-COLUMBIA COS BEEKEEPERS** — Mrs. Roger Giese, S. 7264 Skyview Dr., Loganville, 53943
- **SHEBOYGAN CO BEEKEEPERS** — Paul Thomas, 231 Park St., Sheboygan Falls, 53085
- **SOUTHERN DIST BEE ASSN** — S. J. Ottis, 26 Breese Terrace, Madison, 53701
- **ST CROIX CO BEEKEEPERS** — D. Holmberg, Rt. 4, Box 159, New Richmond, 54017
- **TAYLOR-CLARK BEEKEEPERS** — Florette Kohn, W7377 CTO, Medford, 54451
- **WAPUACA CO BEEKEEPERS** — Alice Mueller, Rt. 1, Box 86, Ogdensburg, 54962
- **WISCONSIN HONEY PRODUCERS** — Rex Bowen, 5358 N. 64th St., Milwaukee, 53218

WEST VIRGINIA

- **BENWOOD BEEKEEPERS** — Jim Pittman, 519 Boggs Rd., Benwood, 26031
- **CABELL-WAYNE BEEKEEPERS** — Gabe Blatt, 3554 Haney's Branch Rd., Huntington, 25704
- **HAMPSHIRE CO BEEKEEPERS** — Mark Bell, Rt. 1, Box 149, Purgitsville, 26852
- **TRI STATE BEEKEEPERS ASSN** — Ellie Conlon, HCR 26160, Box 156, New Martinsville, 26155
- **WHEELING BEEKEEPERS** — Joseph Nawlik, 2745 Jacob St., Wheeling, 26003

CANADA

- **ASSOC DES AGRICULTEURA-PQ** — Robert Villeneuve, 58 Est Colomiere, Quebe G1L IRI 1R1, Que.
- **ASSOC DES APIC PROF PQ** — Roger Doyon, 57 Perrad, Napierville CO, St Remi, Que
- **BRANT DIST BEEKEEPERS ASSN** — Kenneth Crabbe, Rt. 3, Scotland, Ont
- **CARLETON CO BEEKEEPERS** — John Baird, Rt. 1, Woodstock, NB
- **CENTRAL OKANAGAN BEE ASSN** — H. C. Machneil, Peachland, BC
- **CRESTON BEEKEEPERS** — Sig Askevold, P.O. Box 877, Creston BC
- **FRASER VALLEY BEEKEEPERS** — James Medill, 14708-68 Ave., Surrey V3s 2B1, BC
- **GREY-BRUCE BEEKEEPERS ASSN** — Donald Garland, Pinkerton, Ont.
- **KALOWNA BEEKEEPERS** — W. G. Glower, 2203 Woodlawn St., Kalowna, BC
- **NELSON BEEKEEPERS** — Ivan Lewis, 1309 McQuarrie Ave., Prince George, Nelson, BC
- **OTTAWA VALLEY DIST BEEKEEPERS** — George Benson, 156 Pleasant Park, Ottawa, Ont
- **P E ISLAND BEE CO-OP ASSN** — J Dan Mcaskill, P.O. Box 1114, Charlottetow C1A 7MB, Prince Edward Island
- **PERTH DIST BEEKEEPERS ASSN** — Lorne Klopp, Zurich, Ont
- **PRINCE GEORGE BEEKEEPERS** — I. L. McGill, Rt. 7, Sunny Acres, BC
- **QUINTE BEEKEEPERS ASSN** — N E Orr, General Delivery, Woolerkok 3MO, Ont

Please send additions and corrections to:
Rebecca Dull, Directory Supervisor
P. O. Box 706
Medina, Ohio 44258