APRIL '91

GLEANINGS IN BEE CULTURE

WHO'S WHO IN NORTH AMERICAN BEEKEEPING

A 12 PAGE **REMOVABLE** SECTION

INCLUDING

National, State and Regional Beekeeping Associations. Industry, Federal and State Government Contacts, and More.

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Columns

Departments

COVER... Need to get in contact with your State Inspector, the Federal Extension Agent for Beekeeping, EAS or your State Department of Agriculture? It's all here, in the 1991 Who's Who.

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APRIL '91

CONTENTS

(ISSN 0017-114X) Vol. 119, No. 4
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Features

INNER·COVER

Safety First (& Last)

Imagine this.

Your (husband, wife, daughter, son) walked out the door about 10:00 a.m. Saturday morning, mumbling something about going over to the Mummmm yard to check bees. Ten or twenty minutes later (you don't really remember) you heard the truck drive off. Pretty routine.

But now it's 6:30, supper's on the table, and why is there an empty place? Let's see, where were they going? When did they say they'd be back? What were they doing, anyway?

Accidents happen.

Beekeepers, even five colony hobbyists, use lawn mowers, chain saws, weed cutters and other sharp and deadly tools. They drive over less than perfect terrain, lift heavy objects, trip on rocks, scrape wax and propolis with sharp tools, and, if you're the pessimistic type, engage in all sorts of dangerous and unhealthy activities.

So at 6:30, for all you know your (husband, wife, daughter, son) is lying next to a beehive, somewhere, bleeding to death; unable to move because of a broken appendage; stuck up to the windshield in mud; lost; or just having a beer with friends at the local watering hole (Pick one).

More often than not, hobby beekeepers work alone. They throw what they think they'll need in the back and off they go. If the weather's good they may get to two or three yards in a day; or they may spend all afternoon at just one – sound familiar?

But accidents happen. And even a relatively minor incident can be deadly if you're alone, if you can't get help, and if nobody knows where you are. Minor accidents can still be serious if you aren't alone, and you, or your friend don't know basic first aid.

Let's start with some simple tricks, like maps, phone numbers, and names.

If our friend at the beginning had been somewhat more explicit, and you had been more attentive, by 6:30 there wouldn't have been a problem. For instance – do you have each of your bee yards marked, exactly, on a map? And is a copy of that map somewhere besides the glove compartment of your truck?

Is each yard marked, and named? Many beekeepers name their yards after the land owners, "The Phillips" yard, or "Sam's" yard. That name should be on the map.

How well do you know the area surrounding your yards? Just because the way you always go doesn't pass a house doesn't mean there isn't one just over the hill. If you do know the house, do you know the people? Secrecy is one of the by-laws of becoming a beekeeper it seems, but it can be a fatal one if an accident occurs.

So have a plan. Have your yards marked on a map, along with neighbors who are close, and their phone numbers and addresses. If those at home need to get help to you, they need to know where you are. House numbers, road names and road intersections are all important. Even landmarks can help. You know, the first road past the pond on the left?

Next, communication. Given the implicit dangers of working alone, at least let somebody know where you've gone, what you'll be doing and about when you'll return. Besides common courtesy, it will give a starting point of where to start looking for the body when you don't show. It makes life easier for your next of kin.

What about a first aid kit? Yes, every truck and car should have one, and those on the market are probably O.K. But I talked to an expert on medical emergencies, and this is what he said:

- Have several large sterile (or at least clean) dressings (dish towel size are fine). The 8"x10"x1/2" commercial kind are perfect. These get used for large wounds, and make good pressure bandages.
- Have something along to tie/tape it with. Duct tape is ideal. String or rope is good, too. This helps with the pressure part of a pressure bandage with severe bleeding. You can't drive and keep both hands on your chain-saw-mangled foot at the same time.

Continued on Page 228

MAILBOX

■ Idaho Votes

Whereas, The National Honey Board had been successful in promoting honey and,

Whereas, The National Honey Board benefits all members of the industry, Therefore:

Be it resolved: that the Idaho Honey Industry Association Inc. goes on record to support an affirmative vote on the continuation of the National Honey Promotion Program at the 1991 referendum.

Be it further resolved that the IHIA Inc. further goes on record in support of an affirmative vote to discontinue the refund provision of the National Honey Promotion Act at the 1991 referendum.

Passed in open session November 4, 1990.

Jim Ellis, Sec./Treas. IHIA
Emmett, Idaho

■ Better Staff?

I think your magazine is getting better, maybe because there are some women on your staff?

I especially enjoyed the December issue. "The Old Man and the Honey" I though was very good.

I think Richard Taylor's plan of keeping the hives strong in the winter is a very good idea to follow.

Lester D. Hershey
Lancaster, PA

■ Questions?

In the article by Larry Goltz in the November issue of *Bee Culture* has him saying he used 3/4 sized supers in lieu of deep hive bodies and using nine frame spacings. My question is does he put new foundation in with nine frame spacing or have comb drawn in supers with 10 frames.

He also mentions using a six frame radial extractor. In the few catalogs I've seen I have not seen such an extractor advertised. I have an old (early 1930) four frame extractor but must reverse the frames.

Stanley E. Combs
Pittsboro, NC

Editor's Note: There are several ways to do this. Comments anyone?

■ Queen Colors

When I received your Feb. issue, the first thing I noticed was the red-marked queen. It would have been an excellent time to explain the international marking system to your readers.

white (gray)	years ending in	1 or 6
yellow -	years ending in	2 or 7
red	years ending in	3 or 8
green -	years ending in	4 or 9
blue -	years ending in	5 or 0

I'll guess your photograph was made in 1988.

Also, I collect formulas (recipes) for non-food products that contain honey, beeswax, vinegar, glycerine or alcohol. I am willing to trade them in order to get new ones.

Readers, send your formulas and list what you would like to receive: arts, crafts, home, garden, herbs, health or beauty.

Elaine White
8 Valley Hills, Rt. 6
Starkville, MS 39759

■ Christmas Comment

I enjoy reading "Bee Talk" and think Richard Taylor is a real asset to your magazine. I was surprised when a reader wrote, saying he went from a +10 to a -1. All because Mr. Taylor said he does not celebrate Christmas. If Mr. Taylor does not want to celebrate Christmas, I believe that is his choice. Nowhere is it written we must celebrate Christmas, except apparently in the minds of some.

Keep up the good work on your magazine.

Brian Davis
Bentonville, AR

Editor's Note: Our opinion exactly. Thanks. (Voting ran about 2:1 in Mr. Davis' opinion, but over 30 votes were cast.)

■ Easy Target

I recently read your February, '91, issue of *Bee Culture*, because my husband gets your magazine each month. He looks forward to getting the book. I will usually read it, though I do not work in his bees. I work for the U.S.P.S., which is the reason for this letter. As you stated in your renewal ad prices are going up. Gas went up, groceries went up, clothes went up, nearly everything has gone up. But when the postal services goes up, people think it is the worst thing in the world. I have been in the same office six years and this is the second rate increase I have seen. As you stated, printing costs and labor costs have also gone up. But yet you put down the post office for raising rates. If printing, labor and paper costs all go up, don't you think this effects the postal service also? I do not appreciate your ad. It is not cute, funny or smart.

Thank you.

Mrs. Harry LeJune
Winnie, TX

Editor's Note: A well stated argument. The Post Office is too often an easy target.

Continued on Page 201

MAILBOX

■ Bees, Computers and Modems

If you own a computer I invite you to join with me and other beekeepers in modem transmission of data from computer to computer over your telephone lines. This is used by thousands of people all over the world.

The tools you need are: A computer and a telephone modem. If you have a computer, the modem will cost between $69 - $300. If you get a modem you should at least get a 2400 baud modem. End of technical talk.

With the help of several beekeepers in CA, and T.Sanford, U of FL, I have installed a Electronic Bulletin Board for BEEKEEPERS, free other than the cost of phone calls. The number is open 24 hours a day, and you can:

- Leave messages for Bob Brandi, Pres. of ABF.
- Leave messages for Jim Robertson, Pres. CSBA.
- Leave messages to any beekeeper who uses the system.
- Download several years worth of Bulletins and Newsletters provided by T. Sanford, Extension Apiculturist, U of FL.
- Use online or retrieve by downloading a LD-50 Pesticide program provided by Brian Ferguson.

These are systems that you can use today! Not pie in the sky.

You don't have to be a big beekeeper to use this system. You don't have to be well informed on tele-communications, computers or beekeeping.

You may want to just talk, or fight, that's all right. With the systems installed on this bulletin board you can download in 10 minutes messages and mail that will take you four hours to read. You can read your mail at your leisure and reply as you read the next time you call to pick up more mail, send your replys.

The DATA No. is 1-209-826-8107 (DATA only, not a FAX or Voice line). Andy Nachbaur Systems Operator.

Andy Nachbaur
California

■ Referendum Debate

Your editorial "Keep or Kill" in the September 1990 issue of *Bee Culture* hit the nail on the head. It was well written and included sound reasoning that you surely didn't learn at bee meetings. In their replys, Larry Krause and Bruce Beekman (*Bee Culture*, February 1991) failed to address the basic questions you raised.

Your warning about more government control seems to have fallen on deaf ears. Like it or not the outlook for raw agricultural producers is rather bleak. The mythical free trade policy of the E.E.C. Community, U.S., and Eastern Asia will reduce world prices below our (U.S.) cost of production. Since the main factors that govern supply and demand of raw agricultural products are weather and government regulations, it is difficult to see how advertising and promotion will have much effect on our prices. The bottom line of the present Administration's policy is to promote check-off programs for all commodities in lieu of price supports. We are supposed to be pacified when the Administration throws us a skimpy bone – the Market Promotion Program (MPP). This subject of government control needs to be explored.

Krause reminds us that the five year referendum is sufficient control. However, this does not change the fact that the refund privilege permits us to express our displeasure without exposing the program to a negative referendum. The thing that puzzles me is why promoters like Krause and Beekman haven't made a concerted effort to sell the refunders. Instead refunders are called "free riders" which isn't exactly a complimentary term.

I hope you will continue your editorial treatment of subjects that have been overlooked in the past. Since several factors cause sales increase, I would like to see this noted in the literature. One Honey Board Member told me, "The National Honey Board cannot take full credit for every demand increase or receive full blame for the opposite." However, he failed to answer my question, "...Why ignore other factors that influence the rate or movement and the price" What percentage of any gain can be attributed to the efforts of the Honey Board?

Let's keep the Honey Board, but keep it free.

Glenn Gibson
Minco, OK

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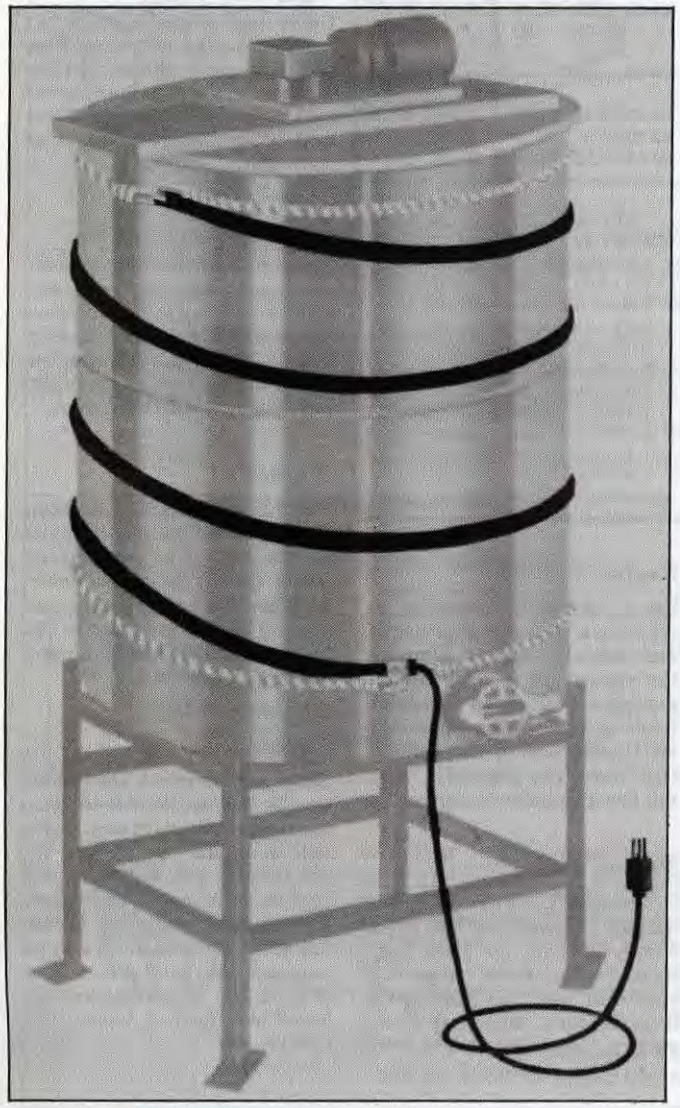
New Products

Acra's Heater

Acra Electric has introduced a new **"Wrap-It-Heat"** Heater to help beekeepers increase honey flow. The new Heater (Model EXT 2-4-6/12) is a 30', 4/64", PVC clad, flexible heater designed to be used to heat the interior of a two frame, four frame or six/twelve frame honey extractor.

In addition to efficiently increasing honey flow, this heater helps to decrease filter time and decrease damage to combs during the extraction process. The EXT 2-4-6/12 comes equipped with two medium strength elastic cords to be used in the installation of the heater on to the extractor. The Heater features a power rating of 210 watts at 120 volts AC.

For over 50 years, Acra Electric Corp. has been a leader in the development of heating elements for drums and other material containers. other items available to beekeepers include 5-gallon pail heaters and a 55-gallon drum heater. For more information regarding Acra products, contact: Sales Department, ACRA Electric Corp., 3801 N. 25th Ave., Schiller Park, IL 60176, (708) 678-8870, Fax: (708) 678-8889.



The Natural Wonder Band

Annie and Bob Grilli of Annie and **The Natural Wonder Band** are multi-media performers specializing in costumed musical shows about Nature. They create songs and choreograph dances for children and their families based on true facts about the Earth's wildlife. Annie and The Natural Wonder Band's shows incorporate the three "E's": Entertainment, Education, and the Environment. All their fun-filled shows involve group participation, and the audience will see, hear, and even become lobsters, penguins, honey bees, snakes, gorillas, whales, tigers, butterflies, crabs, plants, and trees. You can "Wake Up Early in Jungle" and dance the "Hippopotamus" or the "Gorilla Walk" in their "On Safari with Annie Show (featuring Safari Bob)." You can learn "What Makes a Bee Buzz" or be a "Do Nothing Drone" in their "Honey Bee Show." Yell "I'm a Shark" and dance the "Flying Fish Rock" or "Fiddler Crab Dance" in their "Wet & Wild: Wonders of Water Show." Also, have fun learning how and why to "R-E-C-Y-C-L-E" and that "We are a Salad" in their "Magical Trees: Everyday is Earth Day" show.

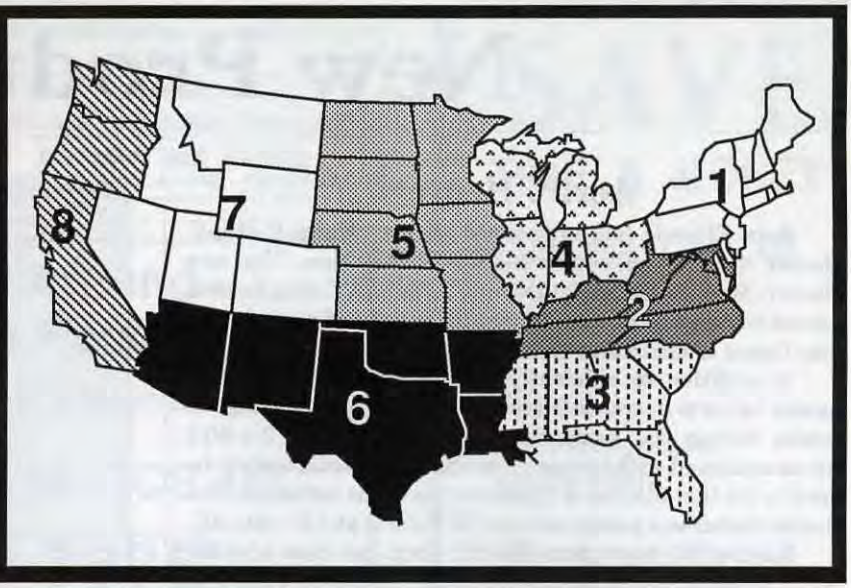
Annie and Bob extensively research their shows and enjoy meeting and interviewing professionals and scientists dedicated to the understanding and the preservation of life on our planet. When Annie and The Natural Wonder Band are on stage, you can be assured that the whole family will have a wonderful time, singing, dancing, and learning about Nature. You can also enjoy them on their two albums, "The Honeybee Show" and "Wet & Wild: The Wonders of Water," and look for their upcoming album, "On Safari with Annie."

For more information on Annie & The Natural Wonder Band contact: Castle of Dreams Music, P.O. Box 147, Bedford Hills, NY 10507-0147, (914) 666-6240.

APRIL Honey Report

April 1, 1991

REPORT FEATURES SUMMARY: R=Range of all prices; A=Average prices across all regions; LM=Last month's average; and LY=prices one year ago.



	Reporting Regions								Summary		History	
	1	2	3	4	5	6	7	8	R	A	LM	LY
Extracted honey sold bulk to Packers orProcessors												
Wholesale Extracted												
60 # Wh.	35.25	40.65	42.10	37.10	37.00	41.50	43.75	45.50	26.50-46.00	40.36	40.34	40.66
60 # Am.	34.25	36.30	35.75	32.49	35.50	39.90	42.10	41.50	26.50-42.00	37.15	38.43	37.50
55 gal. Wh.	.44	.45	.49	.49	.50	.51	.52	.55	.42-.56	.50	.52	.57
55 gal. Am.	.42	.42	.46	.48	.46	.49	.50	.51	.40-.55	.47	.48	.52
Case lots — Wholesale												
1 # 24's	27.90	30.30	27.50	23.50	23.52	24.12	28.70	28.89	23.50-32.88	27.02	28.04	27.75
2 # 12's	25.75	26.10	25.00	23.50	22.20	23.40	26.00	29.48	22.20-31.00	25.67	27.00	26.59
5 # 6's	29.67	26.35	23.50	29.50	27.50	28.00	25.95	26.30	26.35-31.20	27.34	27.76	26.91
Retail Honey Prices												
1/2 #	.95	1.21	1.25	1.49	.83	.89	1.10	1.02	.83-1.49	1.10	1.06	1.01
12 oz. Plas.	1.52	1.40	1.55	1.44	1.18	1.19	1.39	1.58	1.13-1.69	1.42	1.47	1.36
1 #	1.66	1.70	1.89	1.88	1.59	1.55	1.75	1.76	1.29-1.88	1.70	1.71	1.61
2 #	3.20	2.63	3.29	3.80	2.52	3.00	2.99	2.84	2.30-4.00	3.02	2.91	2.86
2-1/2 #	2.80	3.75	3.55	3.51	3.39	3.49	3.25	3.49	2.80-3.75	3.41	3.49	3.37
3 #	4.35	3.78	4.79	3.60	4.12	4.05	4.10	3.87	3.85-4.79	4.10	3.87	3.84
4 #	3.75	4.98	5.59	5.15	4.79	4.25	5.00	4.50	3.75-5.59	4.75	5.06	4.59
5 #	6.88	5.95	6.49	6.74	5.79	5.55	5.79	6.15	5.10-7.50	5.82	6.20	6.03
1 # Cr.	2.25	1.35	1.79	1.89	1.55	1.95	2.25	1.80	1.35-2.25	1.84	1.84	1.72
1 # Cb.	2.13	2.25	1.77	3.65	2.78	2.00	3.15	2.75	1.25-3.65	2.49	2.61	2.28
Round Plas.	2.50	1.92	2.15	2.19	3.79	2.25	2.99	2.23	2.00-3.79	2.42	2.46	1.90
Wax (Light)	1.58	1.10	1.25	1.28	1.29	1.10	1.15	1.30	1.10-2.00	1.40	1.26	1.15
Wax (Dark)	1.50	1.00	1.10	1.00	1.10	1.00	1.10	1.20	1.00-2.00	1.13	1.11	1.04
Poll./Col.	25.00	20.00	30.00	27.65	23.50	25.00	28.50	30.00	20.00-32.00	27.31	27.77	24.15

MARKET SHARE

Now that the ASCS dust has settled, higher priced honey is slowly making its way to store shelves. Small producers should be aware of increasing prices. Conversely, lower priced imports will be seen with increasing frequency, so developing "Locally Grown" loyalty is even more important.

Region 1

Sales seasonably slow, and prices further depressed by lagging economy and warm weather. Pollination contracts in some areas going unfilled due to lack of bees because of strict regulations and/or not enough colonies to do the job.

Region 2

Steady demand and sales in this region, and prices, especially for specialty crops, high. Pollination contracts mostly filled, but often the number of colonies/acre are being reduced because of lack of colonies.

Region 3

Prices steady to actually increasing a bit due to short crops and specialty honeys. Many in the region are gearing up for moving to pollination contracts. Some new players are replacing lost businesses in the pollination game, but generally there are fewer colonies to move.

Region 4

Prices steady to increasing, but demand seems on the rise. Empty shelves are more common. Bees in better shape this year than last, but final count from Tracheal mites not taken yet.

Region 5

Sales and prices steady, but neither moving very fast. Bees seem in good shape and increased moisture in many areas will help this summer. Mites still a significant problem as they continue to move.

Region 6

Prices all over the map as some producers are dumping and some are trying to recoup losses due to ASCS increase. Not a very organized group in this region. Imports also showing up, mucking up the picture even more.

Region 7

The mountain states keep their prices generally high, and sales remain brisk. A bright spot, certainly. Colony conditions uncertain due to mites, and many are moving west to pollinate in CA. Moisture conditions improved, but still not perfect.

Region 8

Sales and demand seasonably steady, but moisture is the center of attention right now. Rains and snow fall have helped but not enough, yet. Rationing will hurt some farmers, and the beekeepers who pollinate. Northern areas give mixed reviews on moisture and pollination. May will be the important month. Mites still playing havoc with many.

RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

"Colony defense is a family matter."

A queen honey bee mates 15 to 17 times in a matter of a few days. As she lays eggs, sperm are drawn randomly from the reserve she accumulates during these matings and has stored in her spermatheca. This means that a colony of bees is composed of a number of subfamilies. These subfamilies have the same mother but different fathers. Experiments on how these subfamilies affect the behavior of bees in a colony are now being undertaken. As a result, our knowledge of social behavior in honey bees is expanding rapidly and in an exciting fashion. In the papers cited below the authors examined how all this affects colony defense.

It has been well established that in a colony there exists a small group of bees we call "guards" They can be seen at a colony entrance where their stance is different from the rest of the bees. Their antennae are outstretched and their forelegs are raised off the ground. Guards usually hold their wings away from their bodies. They rush up and examine foraging bees as they arrive at the colony entrance. In 1987, Moore and his colleagues established that worker bees became guards when they were between seven and 22 days old. Most bees guarded for less than a day but some were guards for up to six days. Guards had an average age of about 15 days and approximately 75 might be seen at any one time. (We know, of course, from other studies that this number is variable and that the smallest number is seen when a honey flow is in progress.) The purpose of these guards is to discourage from entering the hive bees from other colonies, other insects, and small animals.

The small number of guards that may be seen at any one time is many fewer than the hundreds that might attack an intruder such as a skunk, bear, or human when it attacks a beehive. The paper by Breed and colleagues cited below asks who are these defenders, as opposed to guards, and where do they come from? Behavioral and genetic techniques were used to learn what is taking place. The answer, they learned, is that there is a large number of bees, perhaps thousands in a large colony, that appear to be idle but are ready when needed to attack an enemy. These bees are not guard bees but are defenders. Breed and his associates propose to call these bees "soldiers" as opposed to guards.

What is of special interest is that it was determined, using genetic techniques, that the guards and the soldiers are members of different subfamilies, that is, for the most part they have different fathers. The purpose and genetics of soldiers are different. It is stated, "The identification of soldiers as a distinct group of workers may help solve one of the major mysteries of honey bee division of labor, the 'lazy' bee phenomenon." It was noted a number of years ago that there are usually a number of bees in a hive that appear to be doing nothing. These bees may be the soldiers that make up a reserve that may be called upon immediately when needed. Soldiers are of the same age as foraging bees but show less wing wear indicating that they fly less. More aggressive colonies would presumably have more soldiers and less aggressive ones have fewer.

A guard bee challenges a worker as she returns from a nectar gathering flight in the field. Since many other insects would like to steal the delicious honey the colony has stored, guard bees work at the entrance to repel marauders.(photo by Harold Doering)

An Odd Food Source

Honey bees collect only four things in the field: nectar, pollen, water, and propolis. However, when there is a

dearth they may collect something that appears to be like the real thing. Bees have been known to collect road dust, coal dust, and saw dust in place of pollen in the early spring when no natural pollen is available. They may collect tar, drying paint, and caulking compound in place of propolis, again when the plant-produced resins cannot be found.

Now comes another similar report, this time about bees feeding on maple sap exuding from holes drilled by yellow-bellied sapsuckers, into a multi-trunked sugar maple tree in Virginia. The birds feed on the sap that results from their drilling, as do a number of insects. This, however, is the first report of honey bees doing so. The bees did not feed on the sap at the drill holes but rather below the holes on the congealed sap, which had a higher sugar content because some of the water had evaporated. The sap feeding, as might be expected, was observed only on three days in February in the early spring at a time when no natural sources of nectar were available. □

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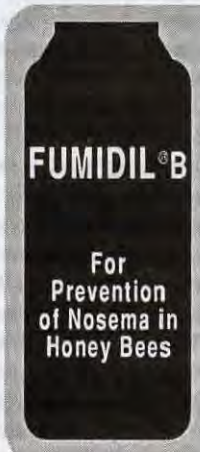

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Susan Cobey

Timothy Lawrence

Spring is finally here, queen producers are in full production and you are eagerly awaiting the arrival of your new queens. These young, vigorous queens will increase your honey production, so it is important to be prepared before they arrive to be sure they are properly and successfully introduced. This means not only preparing your colonies for requeening, it also means preparing for a variety of potential problems that, if anticipated, can be avoided.

When your queens arrive give each cage a drop of water, especially if they are 'buzzing'. Don't feed them honey, as it is easy to overdo and can result in a pile of dead bees stuck together. Examine each cage carefully. Are the queens plump and active? Do the attendant bees appear healthy? Don't be alarmed if a cage contains one or two dead bees. This can occur when the queen-cager's finger is stung while putting attendants into the cage.

It is the producer's responsibility to get these queens to you alive and healthy. Lethargic bees, several dead attendants and hard candy indicate a problem. If you find this situation call your producer immediately. A reputable producer wants to know this and will correct the problem. However, once introduced these queens are your responsibility and you have little bargaining power.

Old queens should be removed from colonies a day or two before the introduction of new queens, but don't dispose of them yet. They are your insurance policy. Old queens can be caged in their original colonies or better, held in a bank. A queen bank can also hold your new queens if the weathers turns bad or if there are extra queens.

Your bank should be queenless and made up of brood and young bees taken from the broodnests of strong colonies. Be sure to feed this unit well. Don't mix old queens and new queens in the same bank. The bees will give preferential treatment to young queens and you are likely to lose your old queens. Bank the queens in cages without attendant bees and be sure both ends of the cage are secure. If you are using candy cages, place a piece of tape over the candy so the bees don't eat this through the screen. The effort required to make up a bank for your extra queens may save your colony later. If you simply put caged queens in a normal queenright colony, don't expect them to survive. The few that do will probably be missing a tarsi or even a leg.

Most queen mailing cages are designed for queen introduction. The candy plug serves as food during transit as well as a method of slow release. The bees will eat through the candy from the outside to release the new queen in a couple days. Be sure to remove the cork (or metal tab) from the candy end of the cage and check the consistency of the candy. If it is hard, a nail can be poked through to assist the queen's release. If much of the candy is already eaten, or is too hard it should be replaced. Queen candy can be made from powdered sugar and corn syrup, but the consistency is important. The candy must be a stiff dough that *does not run*. Soft candy will run at broodnest temperature and the queen may actually get stuck in this and die. Plan ahead and keep an extra batch of queen candy in the freezer. If you need a quick substitute, a gumdrop or piece of marshmallow will do.

It is advisable to remove the attendant worker bees before introduction. The bees in the colony may harass the attendants while they are still in the cage. Fighting between worker bees can cause aggressive behavior toward the new queen. Release the attendants from the queen cage in an enclosed area, such as against a window or in the cab of your truck to avoid loosing the queen. If you have patience, this can be accomplished by removing the cork and releasing the attendant workers individually, using a finger over the hole. This will discourage the queen from leaving because workers are attracted to light, while the queen will seek the dark. The workers can also be released by removing the screen. Replace and staple the screen before introduction.

The new caged queen should be

"Installing Queens Correctly – Every Time"

introduced in the center of the broodnest between two frames of eggs or open brood. She will be more readily accepted by the young nurse bees and better cared for here. Choose a frame with some honey between the brood and the top bar and push the *side* of the queen cage securely in the honey comb. Avoid getting honey into the cage or covering the screen with it. Be sure worker bees from the colony have access to the screen of the cage. This is extremely important. The bees must become familiar with the new queen's pheromone and they must be able to feed her. The cage can be placed vertical or horizontal depending upon the brood pattern. If the cage is horizontal, face the screen down. If placed vertical, have the candy at the bottom (in case it is soft and runs). Double check to make sure the cork is removed so the bees can eat the candy to release the queen. Feeding colonies now helps acceptance of the new queens.

Another safe method of introduction is the push-in cage. This is usually made from a piece of hardware cloth screen with the edges folded down to fit securely over a patch of comb. The screen must be pushed deep enough into the comb so bees cannot chew under it. Place the queen under the cage with space available to begin oviposition (egg laying). It is best to place the cage over emerging brood so that young bees emerge into the push-in cage to attend the queen. The queen can be released a few days later by manually removing the cage or by a candy release. A copper tube soldered to the cage and filled with candy will allow the bees to release the queen over a period of several days.

Some beekeepers like to direct release their queens. Queens should still be introduced and caged in their new colonies for several days before release. Then, the behavior of the queen and workers should be watched briefly and without major disturbance to the colony. A sign of good acceptance is antennal contact between the queen and workers, and queen solicitation of food and feeding.

However, after release a queen's defensive behavior can stimulate the workers to attack her. If the queen raises her front legs in a protective manner, or takes off running, this may signal a questionable introduction. The queen should be recaged and given a couple more days to be accepted.

Spraying the bees and queen with a light mist of sugar water can aid acceptance. This is a distraction for the worker bees and will help facilitate distribution of the new queen's pheromone. Some beekeepers like to mask the queen pheromone with a scent. Keep in mind that bees are very sensitive to this and too strong a scent can act as a repellant. Though you can sometimes get away with using a masking scent for direct release of the queen, it is risky. Before acceptance the bees need time to become familiar with the new queen's pheromone.

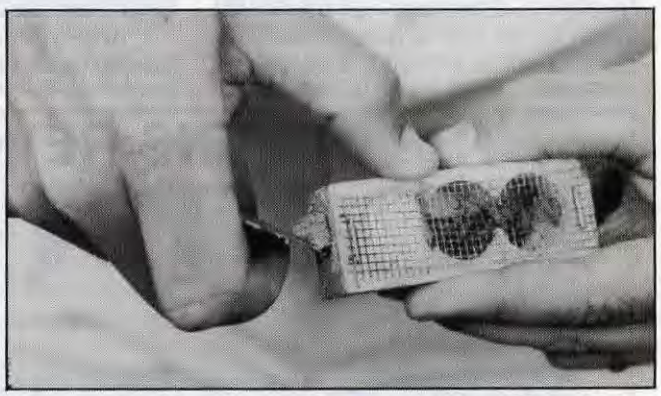
If your queens arrive late and you have already dequeened colonies you must check for natural queen cells. Keep in mind that the workers will rear several emergency queen cells even if you have caged the old queen in the colony. The new queen's first job is to destroy her competition. She will be effective in seeking and destroying mature queen cells, though a virgin reared by the colony will have the competitive advantage. A virgin is more agile and has already been accepted by the colony. If a virgin has emerged expect to loose your new queen during the ensuing battle.

Emergency queen cells can be difficult to find. When more than eight or nine days have passed since dequeening, you must check very thoroughly and destroy all natural queen cells. Shake bees off the brood frames and look closely along the sides for small emergency cells. Any little nub of a cell is suspect and should be destroyed. Also, look carefully to see if any queen cells have emerged. If 10 days or more

Continued on Next Page

Queen Introduction can (almost) always be an easy and painless task if you take certain precautions before she arrives, and follow through afterwards.

Always, Always, Always remove the cork from the cage when introducing the queen so the colony workers have access to the candy, and can release her in two or three days. (Morse photo)



QUEEN & YOU ... Cont. from page 209

have passed since dequeening, chances are very likely that a virgin is running around. If you find one virgin, don't assume she is the only one! Virgin queens are small, runny and flighty compared to mated queens. If you are not sure, shake all the bees through an excluder before introducing your new queen. Obviously it is much easier to prevent this situation than attempt to correct it. If your queens don't arrive on time, avoid this scenario and thoroughly check for emergency queen cells in a timely manner. Or, to avoid this completely release an old queen *back into the colony* instead of leaving it queenless.

If you are starting with package bees, an easy way to introduce a queen is to shake out the bees at the colony entrance. It is best to do this at dusk or dawn when the bees have less tendency to fly. Before opening the package, spray them with a mist of water or light sugar water (don't overdo it!). This will cool the bees and reduces flight. Then shake them out of the package. Remove the screen of the cage and release the queen on the pile of bees. Meanwhile, the bees will be attracted to the smell of comb from inside the hive and start fanning to release the nassanoff (orientation) pheromone. As they march in, the queen will follow, and in this confusion she will be readily accepted.

The queens in package bees often arrive in a two hole cage without candy. If you prefer a slow release over a direct release, this can be accomplished without transferring the queen into a candy cage. Queen candy or a gum drop can be stuffed into the entrance hole of the cage. Better yet, a method discovered by C.F. Koehnen & Sons in Glenn, California, is to fill a tube with queen candy and insert this into the entrance hole of the cage. This will give the bees a day or two to settle and become familiar with the new queen.

Feeding is especially important when starting packages. Sugar syrup stimulates the bees. Give the colony several frames of honey if available in addition to syrup. If you are starting with only foundation, keep in mind comb building requires much energy. If the nectar flow hasn't started you need to stimulate this with syrup. And don't quit feeding, once you have started, until there is a strong flow in place.

After releasing the queen do not disturb the colony every few days looking for her. It is the interference of an over-anxious beekeeper that can cause the new queen to disappear. The queen's status is fragile at this time and too much colony disturbance will sometimes cause the bees to "ball" your newly introduced monarch. Give her a good two weeks, after which she should be well established and have a full batch of developing brood. When checking colonies to see if your queen has been accepted, keep colony disturbance to a minimum. You can assume she is doing well if you see lots of eggs and young larvae.

Seasonal timing, population size and available forage will influence the acceptance rate of your queen introductions. New queens can be introduced almost anytime of year, though obviously certain times are better than others. It is easier to introduce queens when colonies are not in peak production, such as early spring before population buildup or in the fall after the honey flow. During periods of dearth bees tend to be more defensive and queen introductions are sometimes difficult. Planning your seasonal management will make beekeeping activities less problematic, more pleasurable and you will enjoy better honey crops. □

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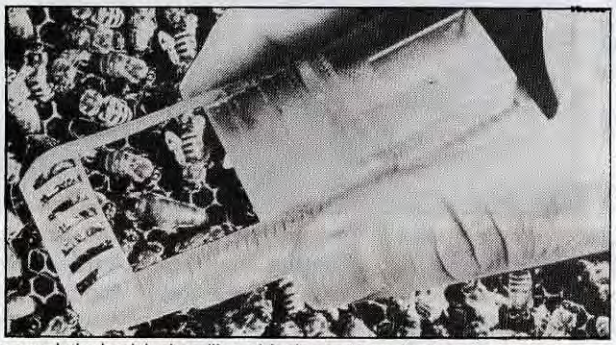

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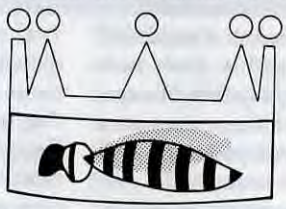

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co-op *n.* an organization of producers and sellers.

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This is what an agricultural commodity cooperative can do for its members. To do this there are required rules and regulations, but the rewards of belonging to, (or starting) a cooperative are numerous.

Primary among these is a constant and continued market for the commodity produced, at stable and predictable prices. But there are additional services available to members that nonmembers don't have access to, or can only reach at higher cost.

These may include reduced costs for transportation, harvesting, inspection, credit, supplies, promotional materials and the like. A common observation is that farmers are the only group that buys retail and sells wholesale. But co-ops have changed that because they purchase supplies in large enough quantities that they command attention from suppliers when purchasing decisions are made.

Co-ops also insure the final product meets or exceeds the standards of the market place, eliminating poor quality stock before it reaches the consumer. Of course the individual producer of a less-than-adequate product will receive less payment, no payment or even be removed from the group. Protection of the co-op, the members, and the image and reputation of the product are paramount in the minds of the organization's managers.

To further 'protect' that image, many co-op's offer training and educational opportunities to members to keep them abreast of the current laws, rules, regulations, techniques and skills needed to produce a top quality product. These may include production and harvesting skills, tips on safety and financial management and the like.

But what of those rules and regulations set down that co-op members must be aware of?

To achieve the goals and directions of a co-op, there must be a manager, and probably a board of directors, who make decisions and guide the group. There will be regularly scheduled meetings or communications so management and membership are in concert when decisions are made. And finally, there are standards and guidelines set that must be met by all members so the final product meets the goals originally set.

The first cooperative probably started when one farmer had more product than he could sell, and his neighbor had more marketing demands to meet than he had product. When they put their heads together it became obvious that a reduced price was better than no price at all, and a reduced profit was better than no profit at all. The 'overproducer' sold at a bit less than market price, which was a bit more than the cost of production, while the 'overseller' paid a bit more than production costs and still met his previous commitment. Everybody did O.K., if not perfect. Commodity 'pooling' worked well, however, and the mutual needs of the producers were fulfilled with the arrangement.

Experts in cooperative organization and management all express the basic tenet for forming a co-op – need. The biggest need, of course, is economic. If there isn't an economic need in the agricultural community a co-op will not work, according to the experts.

When this first co-op became formalized it also benefited the processor of the commodity. They now had a constant and secure supply, and no longer need to rely on single or limited sources for raw materials. Too, the weather no longer was a major factor in production because producers were spread out over a large geographical area.

Although a processor's paperwork is reduced, there is a necessary tension in the relationship between seller and buyer. Co-ops must maintain a competitive price for the commodity in question, or the processor will be forced to look elsewhere to stay in business. The trade off, of course, is that a co-op can supply a steady source of consistent quality product.

"Agriculture co-ops are continually starting, and some have been successful for years."

However, producers have sought to undermine a co-op's structure by dealing with individual producers, offering more than the co-op can afford.

Mike Miller, agricultural extension agent in Medina, Ohio, relates an experience of a tomato cooperative where 92% of the tomato growers were involved.

"The processors went to independent growers and offered less than they paid to the cooperative, but more than

Continued on Next Page

HONEY CO-OP ... Cont. from page 211

the independent grower would get if he sold to the cooperative. The cooperative doesn't exist today," he said.

Agricultural agents seem to have the biggest collection of stories on cooperatives because they are called on to offer their expertise in the area. Bill Lord, agricultural extension agent in North Carolina, was involved with the Carolina Honey producers Cooperative. He attributes the failure of this organization to not maintaining "consistent quality" (in color and cleanliness), and failure to maintain schedules by the members. Both of these problems boiled down to not having cooperation from the members.

"You can build the entire structure well, but if you don't have cooperation – it won't work," he said. The cooperative lost their biggest client, Eagle Snacks, not through bad marketing, or low production, but because members just couldn't or wouldn't honor their commitments in time and quality products.

Failure, it seems, is always a threat. Add to that the independent attitude beekeepers always seem to have, and the formula looks bleak. But agriculture cooperatives are continually starting up, and there are some that have been successfully in business for years.

Sioux Bee Honey has been doing business as a cooperative since 1921. Mark Mammen, director of member relations for Sioux Bee says that there are 519 active members, who have a minimum of 500 colonies each, it has not met with many of the pitfalls of other cooperatives.

When asked if there were any problems with beekeepers not honoring their agreements with the cooperative, Mammen replied, "Things have been successful because of service rendered to members." Those services include providing an available market, providing containers, picking up the honey, and eliminating the need for producers to deal in the open market. Mammen also spoke of the "loyalty of the members " to the cooperative.

Dealing with old, family-owned businesses is another reason that he feels the cooperative has been successful. "We also meet with all the members once a year, and we have members in 25 states," he added.

"The newest honey co-op already has 400 committed members."

Another believer in the success and the importance of cooperatives is Bob Carriveau of Beaverton, Michigan. Bob and his wife Wilma have 1,050 colonies and produce 45 tons of honey a year. After retiring, Bob started beekeeping with one hive, nine years ago. As his business grew, he grew with it. He did his own marketing across the country from Canada to Louisiana and developed brand loyalty to his name – B & W Honey Farm.

One of his motivating forces for developing a cooperative was the honey buy-back program. "We thought it was subsidizing the packer rather than the producer, and figured we had to get a cooperative going," he said.

"It's been two years in the planning. We started with a survey of how many beekeepers there were in the state; how many were interested in the cooperative; how much honey was produced; where the market was (here he discovered that the market showed a need for more than they could produce); how much money was needed to start up, and where the money could come from," he said.

After careful calculations, Bob came up with figures of $250,000 to $350,000 to get a facility, bottling line and small staff. He discovered grant money was available from rural electric and rural telephone cooperatives, city block grants, and the USDA. By becoming involved with local government, he obtained a three year, no interest loan from the county commissioners.

"Go out and hunt for information. Get it here and there and work with the Cooperative Extension Service," he advises cooperatives just starting up.

He also asks a major commitment from members. Dues are $1,000 a year for voting members, but for smaller producers, a membership fee of $100 is charged until their business is built up.

"A high membership fee means commitment. If you don't have commitment – it won't go," he added. He recognizes the independent nature of beekeepers as being a detriment to not only prices, but to the success of a program. "They seldom call around to get the best price for their honey.

It's been a long time coming together and convincing all the members that this is the right way to go, but we have gained the respect of local governments and other beekeepers," he added.

Carriveau has 400 producers committed at this time while others have a "wait and see" attitude. He plans to be in operation this summer.

All new groups are urged to follow the criteria set up by the Agricultural Cooperative Service to use as steps for organizing a cooperative. Jan Halkett, Agricultural Marketing Specialist for the Agricultural Cooperative Service, USDA, lists these steps:

- Hold an exploratory meeting.
- Form a steering committee.
- Conduct a producer survey.
- Analyze the market.
- Prepare a business plan.
- Report the risks and benefits.
- Get commitment & investment.
- Decide to "go" or "not to go".

"There must be an economic need. It must all translate to dollars and increased income," said Halkett about forming a cooperative. Each member must ask, "What can it do for me?"

The thorough process and planning stages, when followed by a green light, should then include legal council. Halkett suggests using an attorney that has experience in cooperatives who will file the articles of incorporation and by-laws. There must also be sample contracts for the cooperative to use with its members. She suggests that contracts for the product are enforceable *and should be enforced* when necessary to insure the continuance of the cooperative.

'Co-op members must be committed for the long run, and never forget what the market was like before the co-op was formed.'

Using the cooperative principle, but eliminating the hands on aspect of

of the Mid-U.S. Honey Producers, has what might be called an "information cooperative." The members in this group market and sell their own honey, and use the cooperative to find out about prices.

Reynolds says that most beekeepers won't tell the members their own production, that they prefer to use estimates and averages. "We don't have enough beekeepers working together," he says and adds that they are individualistic and not prone to sharing.

The Mid-U.S. Honey Producers maintains a hot line at 913-243-6061, where beekeepers can leave information, or request information. Membership requires $50 a year dues, and you must operate at least 500 colonies.

Co-op failure almost always occurs when the beekeeper/members do not make the conscious decision that a cooperative will increase profits. Most of us are motivated by money. Putting a sound information base behind any method of increasing profits is common sense. The problem is that it is a lot of work, too.

The birth of a cooperative, especially a small one, involves having the members do the lions share of the work. The planning, the plotting, the research, takes up much of the time that a beekeeper may wish to spend alone. Perhaps thinking of time like money may make your move ahead with a cooperative easier. Invest the time to produce money.

Cooperatives still allow time to be spent as an individual, though. Remember, only you can work with your bees to produce the basis of the cooperative – honey. Rather than giving up power over your product, you are delegating duties to others who are specialists at what they do. You produce honey well – someone else may be better at packaging it, and someone else may be better at promoting it. If nothing else, cooperatives allow you more time to do what you are good at, as long as you are willing to expand your interests and provide some input to the organization.

Halkett, in a recently published article, sums up the cooperative attitude required.

"By joining a cooperative, members are assuming the responsibilities as committed users and owners. For this to work, members have to understand what the cooperative can and cannot do, be committed for the long-run, and remember what it was like before the cooperative was formed." □

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THE WEEKENDER

FEEDING

JEFFREY L. OTT

"There just aren't enough hours in a day, or days in the week!"

Who hasn't felt that way at one time or another. Sadly, those things that *must* get done usually top the list of things to do and use up most of our time. When beekeeping is a hobby it seldom ends up at (or even near) the top of our *must do* list.

So, when Monday thru Friday have been used up, maybe Saturday or Sunday there will be some time to catch-up what should have already been done out in the bee yard, and maybe even get ahead a little this time. You are a Weekend Beekeeper.

This can be a frustrating way to keep bees. No matter the best of intentions, when Saturday comes it's usually catch up and measure what you've lost, and hurry up and get ahead. Enjoying the bees takes a back seat to taking care of them. And that's no fun.

And that's what the *Weekender* is all about. Jeff Ott, our resident hobbyist weekend beekeeper is going to offer some tips and advice on making those few available hours easier, and more fun.

Catch the Weekender if *you've* ever had to play catch-up on a Saturday morning, or lost a honey crop because you couldn't get out last weekend and super. We'll make beekeeping better.

A modified 'hefting' technique. This won't tell you the weight, but it will tell you how much each weighs in relation to others. Experience, and observation, will tell if 'light' colonies need feeding. (Morse photo)

April is the key month of the year for most of us. What you do and how you react this month will, more than any other month, determine how productive your bees will be the rest of year. Think of it as the make or break month and treat it that way.

Right now the Queen is busy laying eggs and the colony is rapidly expanding. This makes it extremely vulnerable to the whimsical ways of Spring. A colony can quickly consume all of its stores and die of starvation if the weather is such they can't get out and find nectar and pollen. However, they may not starve, but rather be so weakened and stressed they become susceptible to diseases like European Foulbrood, or be unable to defend their home and be robbed of their remaining food stores by a neighboring colony. The stronger the colony is in the spring, the better it will produce honey throughout the summer. The stronger the colony is in the summer, the better it will survive the winter. It is an unending cycle.

For those of us in the northern two-thirds of the country, April is the first chance to really inspect our colonies. March seldom offers many days to open up a hive and pull it apart. If possible, inspect colonies on a warm and sunny 70°F day. If it is cooler, you won't be able to keep the hive open for more than 20 minutes or so since you don't want to chill the brood. But because you are inspecting for food supplies, you don't need to pull the frames apart as you will later this spring when checking for diseases and queen productivity.

So, how do you know when your bees need to be fed? Unfortunately, there are no easy answers. You have probably heard of "Hefting" The idea is that by lifting the back of the hive you *guestimate* the amount of food stores the colony has on hand. This method is not very reliable. It requires you to know how heavy the hive felt going into the winter and how

Continued on Next Page

FEEDING ... Continued from page 215

heavy it should be now.

The theory of hefting is this; if you had a string of colonies, you could go down the line and give each a "heft" Then you could compare each to how the others felt. The assumption is that hives that feel lighter than the rest will need to be fed. However, if they're all light on stores you wouldn't realize it. Hefting will be a better gauge after several years experience, and after "hefting" many colonies.

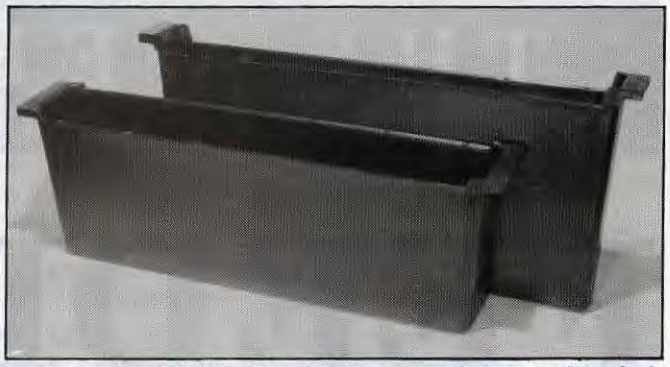
The main cluster of bees moves up through the hive as winter progresses. Along the way they consume their food supply. When you open the hive and look at the colony in the spring you are really looking at the *bottom* of their food stores. You can get an idea on the condition of your colony by how much honey there is between the top bars and the cluster below. If the cluster is up against the top bars and inner-cover, then you know you should start feeding them *immediately*. If the cluster is farther down in the hive body and you see stores of honey and pollen above them, the colony is probably fine for now. Keep an eye on it through, because you may still have to feed it later this Spring.

Feeding a colony with gallon jars placed directly on the top bars. The jars are protected with another super, and the cover placed over this. (Morse photo)

If you decide you need to feed your bees, how do you do it? And, what do you feed them?

For carbohydrate, feed a 1:1 sugar to water by weight solution. To make this, empty a five pound bag of sugar into a gallon glass jar and while stirring, slowly add hot tap water. Stir the solution until all the sugar is dissolved. This works out roughly to the recommended 1:1 ratio of water to sugar needed for Spring feeding. This ratio is by weight. So just remember that a gallon of water weighs approximately eight pounds and you can mix any quantity you need. I like these jars because they are free and readily available. The cafeteria at work regularly receives pickles and other foods in these jars and then throws the jar out. I've even picked up jars from the concession vendors at the county fair.

Take these jars home and wash them thoroughly. Take the lid and punch about ten or so holes across the middle with a frame nail. Now the jar is ready to use!



Two styles of division board feeders. Provide floats so bees don't drown. Roughened sides, or 'ladders' will also help.

Take the jar of sugar water and an empty hive body to the colony you are going to feed. Take off the hive cover and place the jar upside down over the inner cover hole, or directly on the top bars if you don't use an inner cover, or are feeding more than one jar. Put the empty hive body around the jars and the hive cover over this. These feeders work well because there is minimal disruption to the colony when you check on the level of sugar syrup. You can buy gallon plastic pails made specifically for feeding bees. The preparations and use of these feeders are similar to that of gallon jars.

There are several other feeders available. A division board feeder is about the size and width of a normal frame but usually holds less than a gallon of sugar syrup. This feeder is inserted into the hive in place of a frame. You must provide some sort of float or wire screen 'ladder' for the bees to get to the syrup or they may drown trying to reach it. The advantage of this type of feeder is that the sugar syrup can be placed right next to the brood where it is readily available. A disadvantage is that the colony must be opened to refill the feeder – a problem in cold weather.

A Miller feeder is another type available. This looks very much like a shallow super. Inside this feeder are one or two compartments in which you place the sugar syrup. The bees enter through a crawl space. In the feed compartments are floats for the bees to reach the syrup. Once it is placed on the

A plastic-pail type feeder placed over the hole in the inner cover.

hive there is little disruption of the colony to check or fill it. However, the syrup is far from the cluster on cold or cooler days.

The last type is the Boardman feeder. This consists of a single quart (or gallon) jar sitting upside down at the hive entrance. A special wooden or plastic holder keeps it in place. The bees enter through the holder to the jar. No one should use this feeder for spring feeding. It is too small and sits too far from the cluster on cool or cold days. It is, however, good for feeding nucs, or making sure colonies have an easy water source later in the summer.

A Miller type feeder right, looks much like a super. Inside is a leakproof compartment that can be filled with syrup in the spring. Some beekeepers fill them with straw in the fall as insulation. (Tonn photo)

Perhaps one of the most overlooked requirements of the colony during spring is the need for pollen. This is vital to the growth and development of worker larvae because it is the principal source of minerals, vitamins, fats and proteins. If you are going to feed your bees sugar syrup, you should consider providing a pollen substitute, supplement, real pollen or some mix of these.

A pollen *substitute* is any prepared mix used to replace these nutritional needs until a natural pollen source becomes available. Some beekeepers will trap or buy pollen to feed back to their bees in the spring. By adding at least 10% pollen to the mix, the substitute is considered a pollen *supplement.*

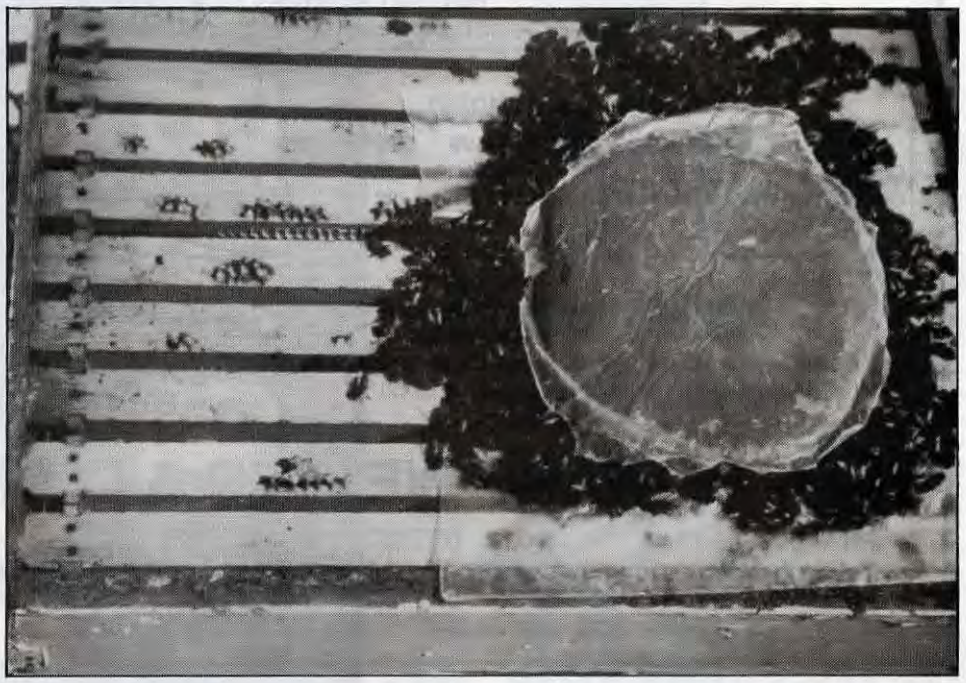
Pollen substitutes are prepared at home or bought from your local bee supply outlet. Generally, you can feed it in a patty on top of the brood frames or as a dry powder in a feeder. If you use pollen in the mix, make certain it comes from a healthy colony. Spores of American and European Foulbrood can be transmitted by pollen, and the mummified remains of bee larva killed by Chalkbrood disease will often be collected along with pollen by a pollen trap. If you feed infected pollen you run the risk of introducing these diseases to your bees.

Perhaps the best way to handle the problem of Spring feeding is to make sure the bees are healthy and in good shape going into the winter. Let them keep all the honey they collect after the first of August. This may mean you harvest a little less honey, but there will be less time and money spent in the fall and spring on feeding syrups and substitutes. No matter how or what you feed your bees, remember, once you start do not stop until there are plenty of natural sources available. The bees will increase their population based upon this sudden supply of food. If you quit feeding them, the bees may starve because of the enlarged population developed on the artificial food supply.

All beekeepers have lost hives to starvation at one time or another. The best way to learn is by doing. Keep accurate records of your colonies and determine which method of feeding best suits you, your bees and your locale.

See you next weekend. □

A pollen supplement (a substitute mixed with pollen) is mixed with water, placed on wax paper and placed, paper side up, on the top bars of the brood super.



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- United States Department of Agriculture (USDA)

Animal Plant Health Inspection Service (APHIS)

- Phil Villa-Lobos USDA,
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AHB Research at State Colleges & Universities

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- The Amer. Beekeeping Fed.
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- American Honey Producers
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•American Beekeeping Federation. Sec.-Treas., Troy Fore, P.O. Box 1038, Jesup, GA 31545.

•American Honey Producers Association. Richard Adee, P. O. Box 368, Bruce, SD 57220, (605) 627-5621.

•Apiary Inspectors of America. Pres., James Bach; Washington Dept. of Agric., Plant Services Branch, P. O. Box 1064, Kent, WA 98032;

•Eastern Apicultural Society of North America, Inc. Sec. Loretta Surprenant, Miner Institute, Chazy, NY 12921, (518) 846-8020.

• Western Apicultural Society of North America. Nancy Stewart, 2400 21st Street, Sacramento, CA 95818 (916) 451-2337

•Ladie's Aux. of ABF. Kathi Brandi, 1518 Paradise Ln., Los Banos, CA 93635;

•National Honey Board. Chairman, Bob Smith, 9595 Nelson Road, Longmont, Colorado, (303) 776-2337.

•Mid-U.S. Honey Producers Marketing Assn. Gary Reynolds, Box 363, Concordia, KS 66901, (913) 243-3619;

•National Honey Packers & Dealers Association. Neil Miller, Miller Honey Farm, 1167 N. 600 W., Blackfoot, ID 83221.

•Professional Apiculturists Assn. Malcolm T. Sanford, Entomology Extension Dept., Univ. of FL, Gainesville, FL 32611, (904) 392-1801.

•Southern States Beekeepers Federation. Dr. John Ambrose, Dept. of Entomology, Box 7626, Raleigh, NC 27695, (919) 737-3140.

•The Canadian Honey Council. Pres., Roger Congdon, R. R. #1, Cottam, Ontario NOR 1BO.

•Canadian Assn. of Professional Apiculturists. D. Dixon, 911 Norguay Bldg., Winnepeg, Man. R3C OP8;

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

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•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.

•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.

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•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).

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- **HAMPDEN CO [illegible]EEPERS** — G. H. Hughes, Kline Rd., Southwick, 01077
- **HAMPSHIRE CO BEEKEEPERS** — R. Pelissier, 136 East St., So. Hadley, 01075
- **MA FEDERATION OF BEEKEEPERS** — Vitto Marrata, 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
- **NORTHERN BERKSHIRE BEEKEEPERS ASSN.** — Jeff Burdick, RFD 2, Box 214, North Adams, 01247
- **PLYMOUTH CO BEEKEEPERS** — Frederic Magee, 148 Turnpike St., West Bridgewater, 02379
- **WORCHESTER CO BEEKEEPERS** — Gertrude Mapplebeck, 217 Wildwood Ave., Worchester, 01603

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** — Susan Sherburn, 2945 E. Snow Rd., Barring Sprigs 49103
- **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** — Darrel Rufer, Rt 1, Box 408R, Waverly, 55390
- **NO CENTRAL BEEKEEPERS 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** — Ken Corbin, 1776 Golden Lake Ct., Chesterfield, 63017
- **FOUR STATE BK ASSOC.** — Josephine Boyer, Rt. 1, Box 286, Seneca, 64865
- **HONEY PRODUCERS** — Phyllis Bond, Rt. 1M, Box 46, Olean, 65064
- **LACLADE CO BEEKEEPERS** — Liz Gregory, Rt. 3, Box 45, Plato, 65552
- **LINCOLN CO BEEKEEPERS** — Karen Aloneter, Rt. 1, Box 411A, Anderson, 64831
- **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
- **SEMO HONEY PRODUCERS** — Glen Thornton, Rt. 6, Box 270-U, Replar, 63901
- **SOUTHWEST MO BEE ASSOC** — E. S. Haddock, Verona, 65769
- **TWO RIVERS BEEKEEPERS ASSN** — Bobee Brown, 1138 St. Paul Lane, O'Fallon, 63366
- **WORTH CO BEEKEEPERS** — Floyd Rinehart, Rt. 1, Grant City, 64456

MONTANA

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

NEBRASKA

- **EASTERN NE HONEY PRODUCERS** — George Huffaker, 5026 S. 23rd St., Omaha, 68107
- **NE HONEY PRODUCERS** — Helen Madison, 110 West 6th St., Valentine, 69201
- **NORTHEAST NE BEEKEEPERS** — Elda Pfanstiel, RR 1, McLean, 68747

NEVADA

- **SIERRA BEE BUZZ** — Bob Weiser, 5595 Lil Abner, Sun Valley, 89531

NEW [illegible]SHIRE

- **MERRIMACK VL[illegible]EKEEPERS** — Kenneth Weyant, 3 Hoodcraft Dr., Derry, 03038
- **PAWTUCKAWAY BEEKEEPERS** — Dr. Ethan Howard, 7 Ordway Land, RR 16, Bow, 03301
- **WAINER BEEKEEPERS CLUB** — Leonard Rowell, RFD 2, Wainer, 03278

NEW JERSEY

- **CENTRAL JERSEY BEEKEEPERS** — Liz Rodrigues, 157 Five Point Rd., Colts Neck, 07722
- **ESSEX CO BEEKEEPERS** — Marian E. Chandler, 85 Deerfield Rd., W. Caldwell, 07006
- **MORRIS CO BEEKEEPERS** — Roha Duve, R.D. 1, Box 258-B, Washington, 07862
- **NE BEEKEEPERS ASSOC, NJ** — Alfred E. Cundall, 390 Jackson Ave., Township of Washington, 07675
- **SOUTH JERSEY BEEKEEPERS** — Sheryl Markley, Rd. 30, Millcreek Rd., Mount Holly 08060
- **SUSSEX CO BEEKEEPERS SOC** — Marilyn Cosh, RD 1, Box 250, Sussex, 07461

NEW YORK

- **CHAMPLAIN VALLEY BEEKEEPERS** — Loreta Surprenant, P.O. Box 90, Chazy, 12921
- **CHAUTAUQUA CO BEEKEEPERS** — Ken Waite, Rt. 3, Box 356, Jamestown, 14701
- **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

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** — Eloise V. Wilson, P.O. Box 159, Fairview, 28730
- **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 Allen 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., Sanfored, 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, 8[illegible]rnley 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
- **NC STATE BEEKEEPERS** — Bob Haas, Rt. 7, Box 121, Hillsborough, 27278
- **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** — Allen Caldwell, 115 Peachtree St. #103, Murphy, 28906
- **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

OHIO

- **ASHTABULA BEEKEEPERS** — Bill Loudon, 86 Stockwell St., Painesville, 44077
- **BUTLER CO BEEKEEPERS** — Bob Raven, 6651 Imhoff Rd., Oxford, 45056
- **CARROLL CO BEEKEEPERS** — David Pallaye, 4107 Ivory Rd., NW, Carrollton, 44615
- **CENTRAL BEEKEEPERS ASSN** — Vernon Chute, 1635 N. Hague Ave., Columbus, 43204
- **CENTRAL OH BEEKEEPERS** — Pat Radloff, 7100 N. County Line Rd., Centerburg, 43011
- **CLARK CO BEEKEEPERS** — Rolland Anderson, 1312 N Lowry Ave, Springfield, 45504
- **COLUMBIANA & MAHONING CO BEEKEEPERS** — Beverly Converse, 4950 Lower Elkton Rd., Leetonia, 44431
- **COLUMBIANA CO BEEKEEPERS** — Grace Hamilton, Rt. 1, Lisbon, 44432
- **CUYAHOGA CO BEEKEEPERS** — JDon Hagenberger, 9230 Independence Blvd., Parma, 44130
- **FRANKLIN CO BEEKEEPERS** — Vera Gorochow, 3563 Byers Rd., Delaware, 43015
- **GEAUGA BEEKEEPERS ASSN** — Lynne Hershberger, Box 334, Burton, 44021
- **GREENE CO BEEKEEPERS** — O. K. Simison, Rt. 1, Spring Valley, 45370
- **GUERNSEY CO BEEKEEPERS** — Dr. Stephen Pierson, 124 Merick Rd., Cambridge, 43725
- **HEADWATERS BEEKEEPERS** — Arthur Koready, 4084 Co. Rd. 115, Mt. Gilead, 43338
- **HIGHLAND CO BEEKEEPERS** — Jess Prye, 7926 Wright Rd., Hillsboro, 45133
- **HOCKING CO BEEKEEPERS** — Annette McClain, 20193 St. Rt. 328, New Plymouth, 45654
- **JEFFERSON CO BEEKEEPERS** — Guy W. Amrtin, Box 422 Rainbow Dr., Bloomingdale, 43910
- **KOKOSING VALLEY BEEKEEPERS** — Kenneth Neighbarger, 305 Sychar Rd., Mt. Vernon, 43050
- **KNOX CO BEEKEEPERS ASSN** — Harold Bower, 14258 Beckley Rd., Mt. Vernon, 43050
- **LAKE CO BEEKEEPERS ASSN** — Roy Hendrickson, 2234 River Rd., Willoughby, 44094
- **LAWRENCE CO BEEKEEPERS** — Bill Reid, Rt. 1, Box 100, Willow Wood, 45696
- **LOGAN CO BEEKEEPERS** — Mrs. James R. Eaton, Rt. 1, Mt. Victory, 43340
- **LORAIN CO BEEKEEPERS ASSN** — Fred Nemeth, 17513 Honeysuckle Ln, Columbia Station, 44039
- **MARION CO BEEKEEPERS ASSN** — Henry Perry, 440 Avondale Ave., Marion 43302
- **MEDINA CO BEEKEEPERS** — Annie Pemberton, 3814 Beat Rd., Litchfield, 44253
- **MIAMI CO BEEKEEPERS** — Robert Newmann, 183 S. Dorsett Rd., Troy, 45373
- **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** — Dennis Moffitt, 185 Homestead Dr., New Concord, 43762
- **NW OHIO BEEKEEPERS ASSN** — Leroy Shoultz, 233 Elm St., Findlay, 45840
- **PORTAGE CO BEEKEEPERS** — Homer Kibler, 7291 St. Rt. 5, Ravenna, 44266
- **RICHLAND CO BEEKEEPERS** — Ralph Mitchell, Brokaw Rd., Rt. 2, Butler, 44822
- **ROSS CO BEEKEEPERS ASSN** — Fred Weaver, 27 Courtland Dr., Chillicothe, 45601
- **SCIOTO CO BEEKEEPERS** — Judy Bradbury, Rt. 2, Minford, 45653
- **SOUTH CENTRAL BK ASSN** — Fred Ginther, 122 Huntington Lane, Chillicothe, 45601
- **SOUTHWESTERN OH BEE ASSN** — Don Cooke, 731 Miami Ave., Terrace Park, 45174
- **STARK CO BEEKEEPERS** — Dorothy Tonn, 11754 Bonnie Brae Dr. S, 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** — Sheila Terrill, 10044 Ridge Rd., Kinsman, 44428
- **TUSCARAWAS CO BEEKEEPERS** — Mrs. Donald Ziegler, 666 S, Beaver St., Newcomerstown, 43832
- **WARREN CO BEEKEEPERS** — Vince Caldwell, 6178 N. St., Rt. 48, Lebanon, 45036

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** — JMary-Frann Hutson, 920 N. Avenue 'E', Coweta, 74429
- **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

- **LANE CO BEEKEEPERS** — James Sheridan, 1885 Norkenzie Rd., Eugene, 97401
- **TUALATIN VALLEY BEEKEEPERS** — George Robins, 1255 SW Taylors Ferry, Portland, 97219

PENNSLYVANIA

- **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** — Clifford E. Ward, 910 Pond Dr., 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, 7836 Cedarcrest Rd., Knoxville, 37938-4405
- **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** — John R. Kelley, Rt. 14, Box 229, Sevierville, 37862
- **STONES RIVER BEEKEEPERS** — Gerard J. Flipse, Rt. 2, Box 27G, Lascassas, 37085
- **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 S. Prieto, 6418 Redbird Lane, San Antonio, 78240
- **ANDERSON CO BEEKEEPERS** — Tony Gunnels, 208 Fifth St., Palestine, 75801
- **ANGELINA ASSN** — George A. Berry, Rt. 9, Box 5160, Lufkin, 75901
- **AUSTIN ASSOCIATION OF BEE STEWARDS** — Mack Ray, 10608 Macmora Rd., Austin 78758
- **BRAZOS VALLEY ASS'N** — Khris Thurmold, Rt. 4, Box 61, Belmont, College Station, 77840
- **CAPITOL AREA BEEKEEPERS** — A. J. Adaire, 1507 Summit St., Austin, 78741
- **COASTAL BEND BEEKEEPERS** — Jack Padgett, 9566 Goldcrest, Corpus Christie, 78418
- **COLLIN CO HOBBY BEEKEEPERS** — Bill Johnson, 3441 Cherrywood Lane, Plano, 75074
- **CONCHO VALLEY ASSN** — Travis Lane, 6427 Goodland Loop, San Angelo, 76901
- **EAST TEXAS ASSOCIATION** — Harold L. Woolard, Rt. 1, Box 20, Edgewood, 75117
- **EL PASO ASSN** — O. T. Franklin, 10220 Bermuda, El Paso, 79925
- **ERATH COUNTY ASSN** — Karena Eccles, Rt. 1, Box 159, Geln Rose, 76043
- **FORT BEND ASSN** — Elton Reynolds, Rt. 1, Box 223, Rosenberg, 77471
- **GALVESTON CO ASSN** — Margie Coplin, 3512 Jack Beaver Rd., Santa Fe, 77517
- **GOLDEN TRIANGLE ASSN** — R. C. Lawson, 1855 Fox Rd., Vidor, 77662
- **HARRIS CO ASSN** — A. J. Fucic, Rt. 1, Box 257, El Campo, 77437
- **HEART OF TX BEEKEEPERS** — Ann G. Hill, 303 W. Chantilly, Waco, 76706
- **HILL CO. BEEKEEPERS ASSN** — August A. Lutz, Sr., 916 Monroe, Kerrville, 78028
- **HOUSTON BEEKEEPERS ASSN** — Jim Rogers, 1511 W. 34th St., Houston 77018
- **MONTGOMERY CO BEEKEEPERS** — Milton Howard, Rt. 13, Box 1867, Conroe, 77303
- **NORTH CTRL TX BEEKEEPERS** — Virgil I. Woodfin, 200 S. Park, Iowa Park, 76367
- **NORTH HARRIS COUNTY BEEKEEPERS ASSN** — John McCall, 5025 Hartwick St., Houston, 77093
- **PERMIAN BASIN ASSN** — James Brittingham, 2312 North Adams, Odessa, 79762
- **RED RIVER VALLEY ASSN** — Larry Graberholz, P. O. 2501, Wichita Falls, 76307
- **RIO GRANDE VALLEY ASSN** — Glenn Mace, P. O. Box 1473, Edinburg, 78540
- **SOUTH PLAINS BEEKEEPERS** — James Colson, P.O. Box 2247, Lubbock, 79408
- **TEXOMA ASSOCIATION** — Russell Green, P.O. Box 164, Ector, 75439
- **TRINITY VALLEY ASSN** — Glenda & Robert

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HEAD 'EM UP... ... MOVE 'EM OUT

ROGER A. MORSE

This is about practical methods of moving one to a hundred colonies of bees in a simple and safe manner. Commercial beekeepers who move hundreds or thousands of colonies have efficient methods and equipment that are not practical for those moving a small number of colonies. The commercial beekeepers use pallets, which are usually equipped with Myers clips that hold four colonies securely in place. The pallets are loaded onto trucks with bobcats (forklift trucks) and the whole load covered with heavy nylon screening to contain the bees. The colony entrances are not closed and the colonies are wet down or iced to prevent overheating. Beekeepers who move only a few colonies, especially in urban areas, usually need to close each colony individually to make certain there are no flying bees around their truck or car.

Overheating

The greatest danger for the bees when they are confined is overheating. Bees rearing brood keep the temperature of the brood nest between 92° and 95°F. If the bees do not have sufficient air, and access to water to cool the hive if necessary, the temperature may move up rapidly and the colony may suffocate. When this happens the combs often melt, releasing the honey and making a real mess in the hive. Keeping hives cool when they are being moved is a great concern.

If the weather is excessively warm while colonies are being moved, or if a truck breaks down and one is forced to stop along the side of a road, it is important to make certain the colonies are kept cool. Sprinkling as much as a pint or more of water over the top of a moving screen may be necessary. It is better if the water is sprinkled and not poured over the screen. A pound or more of ice, which will melt slowly, on each moving screen, may serve equally well. Truck stops often stock chopped ice for truckers carrying fresh fruit and vegetables.

Screens

The safest way to move colonies is to use both a top screen and an entrance screen. A number of different top screens have been designed but I like those used by the late Archie and William Coggshall who once moved colonies between New York and Florida. Their top screen was an inch and a half deep and gave the bees extra space for clustering above the top bars. The first Coggshall moving screens were made with ordinary window screening as a covering but this punctured too easily and they switched to stiffer 8-mesh hardware cloth. This cloth has eight wires per inch each way and is galvanized; it is hardy and has a long life. Four nails are used to fasten the moving screen to the colony.

An important feature of the Coggshall moving screen is that the four nail holes that are used to hold the screen in place are predrilled and take an 8d box nail that fits loosely into the holes. Box nails have a smaller diameter than common nails, but have just as much holding power. Having larger nails holes makes removing the top screen and the nails easier at the end of the move. A hive tool is used to pry the screen upward to loosen the nails from the hive body; the nails may then be picked out of the holes.

Another feature of the Coggshall moving screen is that it is slightly smaller than the outside dimensions of a standard super. The top screen is about one fourth inch narrower and shorter. This can be an important consideration when moving bees. If the moving screen is a little smaller than the hive body onto which it is nailed there will be no projecting edges to catch on adjacent hives. I have seen moving screens work loose while colonies are being transported because they rub against each other.

If the colonies are stacked one on top of another, it is a simple matter to build a rack that will fit over the tops of several hives and under a second row of hives that is placed on top of the first. Most large standard trucks have beds built so that five hives may be placed side by side across them. The rack should be built to cover all five hives at one time. Of course, to use a rack, and to move bees efficiently, it is necessary that the equipment, including the moving screens, be of a uniform size.

If there is adequate top ventilation, and the weather is not too warm, one may close the entrance of a colony with

Continued on Next Page

Getting bees from here to there can be a real challenge. But with the right equipment, and a little planning, moving one or a hundred colonies can be safe, easy and efficient.

The full-cover, Coggshall-type, moving screen provides ample ventilation. The screen is held in place with four nails that fit into predrilled holes on the rim of the screen. Quarter inch slats are fastened on top of the screen to protect handlers from loose wires and to hold the screen in place.

MOVING ... Cont. from page 219

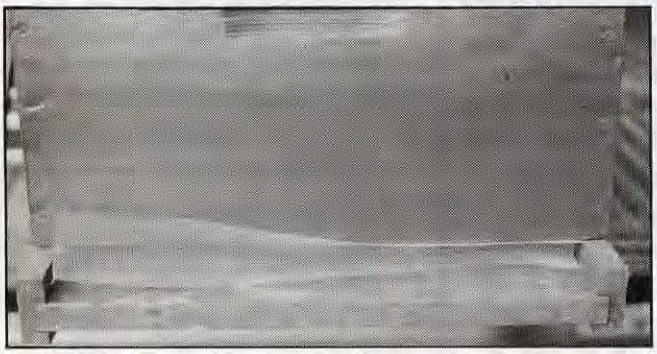
a solid wooden block. However, it is much safer to use some type of entrance screen. Again, a great variety of screens have been devised. Commonly used is a piece of ordinary metal (aluminum or iron) window screen about two inches wide and fifteen inches long. This is a tuck-in screen and will stay in place under most circumstances. Many beekeepers prefer a stiffer screen and make one from 8-mesh hardware cloth, folded in a "V" Still other beekeepers use porch screens that are nailed in place.

The Best Time to Move

Many beekeepers feel the best time of day to move bees is early in the morning, starting just before the sun's disc is visible but there is enough light to see. I don't care to move bees at night when it is necessary to use lights to see where one is walking. In the early morning the bees are usually quiet and not inclined to fly. Usually the moving screens are nailed in place a day or two in advance so that the only thing necessary to do before moving the colony is to put the entrance block or screen in place.

Clustered Outside?

It is not unusual to see bees clustered at the entrance on the outside of a hive. This is especially true if the colony has been in several supers and was reduced to one or two supers for moving. Of course, one should not try to crowd too many bees into a hive. However, if there is sufficient room, the bees will move into the hive if they are smoked moderately. It may take five to ten minutes and several smokings for the bees to move.



This simple tuck-in screen made with ordinary aluminum window screen is more than adequate to contain the bees. Here it is shown only partially pushed into place.

Stragglers

Several years ago one of my graduate students and I closed some hives very late at night and left them closed the next morning to learn if some bees stayed out all night. We got the idea to do so because one will sometimes see a motionless, dew-covered bee on a flower early in the morning. Honey bees are cold blooded and their bodies assume the temperature of the environment; not infrequently they are caught at night and cannot fly home. We found that in the Ithaca, NY area that colonies of bees containing between 45,000 and 60,000 worker bees would have between 0 and 55 bees that would stay out all night during some nights in July and August; this is the warmest time of the year for us and the time when colony populations are greatest. Thus, one can always expect there will be a few stragglers in an apiary from which all of the colonies are moved. Commercial beekeepers who are moving a whole apiary usually leave one small hive at a site to pick up these stragglers.

Reorientation

If you have only one colony of honey bees, it may be moved one or a hundred or more feet and the bees will reorient to the new location easily. If there are two or more colonies in an apiary, reorientation is not so easy and there will be confusion and drifting into colonies not their own if they are moved more than a few feet. If colonies are moved only two or three miles bees that have been foraging may recognize where they are and return to the original location.

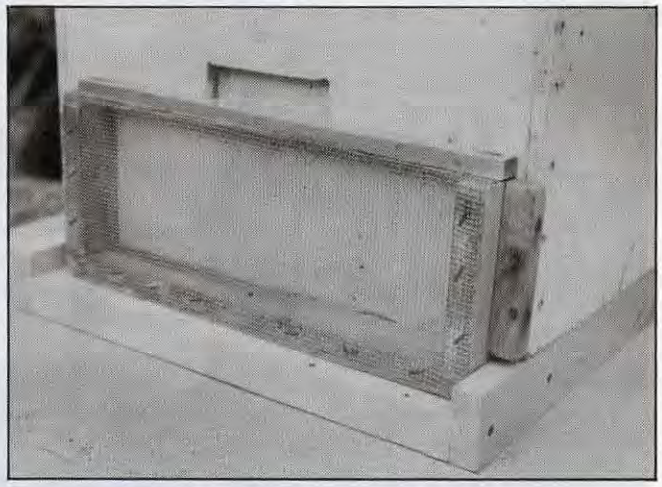
However, if bees are moved more than a few miles it is remarkable how rapidly they become accustomed to their new location. The classical experiment on reorientation was performed by Drs. J.B. Free of the Rothamsted Experiment Station and M.V. Smith of Guelph University. They carried several colonies into a flowering pear orchard at 11:00 a.m. at a time when the temperature was 80°F The bees had been moved more than a few miles and the entrances had been screened until they were placed in the orchard. The first pollen-carrying bee returned to a hive 13 minutes after the colony entrance was opened and the bees allowed to fly; during the 14th minute six pollen laden bees returned to their hives and in the next minute and thereafter, greater numbers of bees returned after reorienting and foraging successfully.

Moving Day

For reasons that are not well understood, bees that are screened and moved are very aggressive on the day they are released. Moving bees with open entrances reduces this aggressive behavior, again for unknown reasons, but most beekeepers who work colonies on the day they are moved report excessive stinging. One can suit up more carefully, but still it is not a pleasant experience. It is far better to delay working moved bees for a day.

Moves

Beekeepers who move bees have observed that if they leave their truck motor running while they are moving colonies off and onto a truck the bees will remain more calm. This subject was researched by Drs. Spangler and Owens of the USDA laboratory in Tucson, AZ and was published in the *American Bee Journal* in 1976. They showed that vibrating a pallet would reduce the flight of bees from colonies on it by about 70%. Thus, when moving bees we recommend that the truck motor be left running at all times.



This homemade porch screen provides ventilation and a clustering space should the bees in the colony become too warm.

Netting The Load

Some beekeepers cover their loads of bees with netting, even those where the colonies are screened and closed individually. This is an added precaution certainly worthy of consideration. Of course it is costly and time-consuming to do so, but it is disturbing to stop at a red light or gas station and to see bees flying off a loaded truck.

A more significant safety factor, however, is that a load of bees that has been securely netted will be much less of a hazard should an accident occur. Abrupt stops, large bumps and the like can be serious enough but a serious accident, like a turned-over vehicle can be disastrous.

Although a net will not prevent spilled hives, it will (if used correctly) keep supers and frames within a reasonably accessible area, and make clean-up easier and safer. Netting material is expensive but given proper care has a long life. Netting made of nylon is most popular.

How to Staple Hives

When staples are used it is important that they be nailed into place correctly. Previous experience has shown that if only one staple is used on opposite sides of a hive to hold two supers together, there may be some shifting of supers on a truck and bees may escape. The staples should be placed so that they are angled in opposite directions, otherwise there may also be some shifting of the supers.

Continued on Next Page

A variety of gadgets for lifting and moving colonies have been invented; one type is illustrated here as these beekeepers move a colony in a Florida apiary. Don't forget to fasten the bottom board to the bottom super.

A truck safely loaded, screened and ready to go.

MOVING ... Cont. from page 221

Little Holes

Cotton wadding may be used effectively to plug small holes and cracks in beekeeping equipment where bees might otherwise escape. Bees will remove the cotton strands in a matter of a day or two, but the cotton will usually give sufficient protection for the time needed. It is helpful to always carry a little wad of cotton to plug holes in equipment in an emergency. Two inch wide duct tape is also useful to plug little holes and gaps between supers.

Summary

Beekeepers have been moving colonies of bees for thousands of years. Moving a colony when done correctly does no harm to the brood or the bees. Bees reorient in a new location rapidly. Stragglers can be a problem, but they can be safely managed. The greatest concern is to make certain the colonies do not overheat. I have never heard a beekeeper complain about chilling brood during a move; the bees seem to be able to protect brood when colonies are being moved. Moving bees late in the fall may stimulate brood rearing and that is usually not desirable unless one is moving into a southern climate.

If you must move your bees this spring, whether to a pollination job, a new yard or whatever, use these tips and techniques. You'll have a safer move, and healthier bees. □

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OUTYARDS

LARRY GOLTZ

I have no home bee yard. An ordinance forbids it, so a half dozen outyards are maintained to supply my honey production requirements. Not surprisingly each of these widely separated locations has its individual characteristics.

At the greatest distance, some eighty miles away sits an apiary in a fertile, lush valley with emerald green alfalfa fields in summer. Snow capped Mount Shasta looms majestically on the near horizon. Uniqueness is the outstanding characteristic of this outyard. The valley is a miniature prairie among mountain ranges. In summer there are hawks perched on overhead wires, swift flying predators awaiting prey. In late autumn western meadowlarks, with their flute-like song fly and glide from fence post to fence post. During the season before last, these colonies gathered alfalfa honey in surplus but last summer, none. Strangely, a honey with a mild flavor and a reddish tint appeared in the supers instead. I think the mystery was solved when I realized the far-ranging foragers tapped into a nectar source wholly unexpected. Within foraging distance, apparently, were acres of strawberry plants grown to supply truck gardeners. The bloom in midsummer may, I think, be superfluous, since the object is to produce a harvest of plants, not strawberries.

Another outyard is nestled in a natural amphitheater formed by surrounding mountains. Nearby apple orchards form squares of trees in well ordered phalanxes that contrast with the mixed oak, conifer and shrub ecosystem of the surrounding mountain sides. In the background, behind the apiary, a cold, swiftly flowing creek fed by melting snow cascades over huge stream-bed boulders. I sometimes muse, standing at stream's edge, about how many native rainbow trout may be lurking in the eddying pools below me. It would take a fly rod artist to reach these maelstroms of creek water under the dense canopy of overhanging trees.

Another outyard is on a rocky knoll at the rear of a cluster of ranch buildings. Old oak trees offer partial shade, a welcome relief on blistering hot summer days. Here, colonies fare well, warmed and dry during winter on a south-facing slope. Yellow star thistle, the bane of ranchers hereabouts, is the principal nectar source, the honey flow beginning about the first of July. A plethora of small rocks, remnants of some ancient volcanic eruption litter the beeyard, a menace underfoot but an effective livestock guard, keeping cattle and horses from disturbing the hives.

My most recently established outyard I most vividly remember because of the two-foot-long rattlesnake I routed from beneath a hive. Half hidden, it reacted with startling suddenness to my prodding with a short stick at the protruding rear half of its body. Its darting head came uncomfortably close to my thumb as it struck in self defense. It slithered away into the creekside brambles never to again be seen. I said a mute prayer of thanks to a guardian angel.

I like the convenience of my nearest outyard, a few minutes drive from the city. Now half surrounded by a housing development, the colonies are isolated on a forty acre tract of land, once part of an early settler's parcel of farmland. Manzanita and ceanothus shrub surrounds the site but again the omnipresent yellow star thistle usually furnishes the honey crop. The nearness of this outyard makes it a convenient "holding yard" for swarms caught and hived in the city and surrounding area.

Visits to my outyards are neither a burden nor a chore. Rather, I regard them as a pleasant field day, an excuse for us to take our lunch and sojourn briefly in the mountains away from the Central Valley's heat of summer. Sometimes we witness unexpected sights – a deer with spotted fawn bounding effortlessly up a steep incline at the side of a lonely mountain road; bands of bright blue lupine growing along the roadside in spring, accented by the mauve of native western redbud in bloom, and later the delicate blue and white sprays of mountain lilac. Stately specimens of pine, inscense cedar and fir, spared the lumberman's saw, line the route over the mountain ridges. From these passes the distant and often snow covered mountain peaks of the Thousand Lakes Valley Wild Area can be seen. Western quail rustle in the underbrush as we approach the apiaries. Occasionally a buck deer, startled by my approach will quickly rise from his resting place in a thicket and, whipping branches aside, flee into the woods. Yes, and bears also have visited a site since abandoned for that reason.

"A visit to my outyards severs the bonds of the routine & mundane."

Visiting my outyards is to me a mini-adventure; a severance of bonds to the routine and the mundane, an excursion to an unpretentious setting, a quiet mosaic of vegetation, landforms, streams and lakes of which I feel my bees and their activities are an integral part. □

GARDENS

STEVE TABER
Goudous
82370 Villebrumier
France

When I was starting with bees in 1938, there were several distinguished authors who wrote regularly about bee plants. I think the two most notable were Harvey Lovell and his father from Kentucky, and Frank Pellett, who maintained a honey plant test garden at Atlantic, Iowa for many years. (Does anyone know what has happened to this test garden? Please let me know if it still exists). Then Dr. Everett Oertel wrote extensively about honey plants, and published a USDA Bulletin on the subject.

This article is about bee plants too, but I'm neither a professional botanist nor gardener. In fact, at best I am only an amateur, who's gardens always have more weeds than plants I wanted to grow.

However that doesn't mean I don't get to eat what I have planted. On the contrary. I usually have more corn, tomatoes, squash, radishes and other produce than I can eat.

I know many beekeepers who garden like I do. They, like me, start in the spring with great promises of how this year they will keep a neat and weed-free garden. But at least with me, the garden always ends up a jumble of weeds by the end of summer. That's because during summer's heat the bees need all my attention. They have first priority of my time. But then I don't like to work out in the sun anyway, like I used to. You see, there's lots of excuses for not working in the garden, which means lots of weeds at summer's end.

Last year was a bit different. I was gardening in a different country and I didn't know anything about anything, except that I again grew a big crop of weeds. When I say I did't know anything, it means when to plant particular crops, like sweet corn, because I didn't know about the length of the growing season, or when the first frost came, and so on. I also didn't know which varieties would do well here and which ones wouldn't.

My garden last year was unusual in another respect, because it was a garden spot used by the farm family who had lived here for at least a hundred years. The old French farmhouse I bought is 200 years old. The garden and house are surrounded by a fence, which goes around even the farmyard and garden. And gardens, like barns, tend to stay in the same spot, so when I was attacking weeds with my hoe and I would strike a pebble with it, thoughts would cross my mind of many years past. But this is not the point of this article. Rather, the point is about how bees fit in, and how you can have more fun with your bees in your garden with some of the vegetables you grow.

McGregor, in his book "*Insect Pollination of Cultivated Crop Plants*" says that pumpkins, squash and gourds are all the same plant species, even though they look very different to me. Be that as it may, they are all fun to grow in the garden and the flowers are really attractive to bees. The main reason I decided to grow them last year was my new garden was much larger than I have had before, and I knew that those plants would out-compete any weed stupid enough to try and grow amongst them. In fact, I have always been surprised that pumpkins haven't taken over the world, they grow so fast, so big and so aggressively.

I have seen as many as four bees in one pumpkin flower at a time. And, although McGregor doesn't say so, most melon crop flowers must have a large number of insect visitors in order to set the proper number of seeds. In the case of a muskmelon the proper number is about 500 seeds to make a proper sized melon. If there are fewer than that the fruit will not be round, attractive, or saleable.

When you plant your garden this year be sure to grow many more cole crops than you will ever eat, just to enjoy the bee activity on the flowers. 'Cole crops', defined by McGregor, are cabbage, broccoli, brussel

This pumpkin flower has three bees now, and in less than a day, hundreds!

sprouts, cauliflower, kale, collards and kohlrabi. He adds that a simple cabbage plant can produce a half pound of seed, and if you are familiar with cabbage seed you'll realize there must be a half-million flowers produced. So let your bees have some fun in your garden and let some of these plants go to full flower.

Radishes and turnips are also wonderful (and are related to the Cole crops) to let go to flower because they are attractive to bees, too. Most gardeners pull these out after they have gone past prime but I think this is a mistake. OK, so they flower, and produce seed, which you don't want, so what. Like I said at the beginning, I mostly grow weeds anyway. And if that's what you do too, what's wrong with adding a few more weeds that your bees will enjoy?

> "You can have more fun in your garden, if you plan it for bees, too."

There are, of course, lots of other garden plants attractive to bees, including many herbs, fruit trees, and vines that bees visit, and you can grow.

This year I will plan my garden as always, and it will be planned weed free. On the little fence surrounding the garden I will plant beautiful gourds, all around. I know they will climb the fence to keep weeds on the other side from encroaching on my garden. I'll use the gourds for two things to give to my neighbors as decorations, and I will hang them all around in the trees here on my little farm, with appropriate sized holes cut in them, for various birds to nest in. But most important, I will be able to watch the bees pollinate the flowers while standing up, not squatting over. I've never planted gourds before, it should be fun. □

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INNER ... Continued from page 196

- Band-aids. Lots of band-aids and in mixed sizes. They keep wounds clean, and will help stop bleeding.
- Ice, says my expert, is also good to have. If you pack a lunch, throw in a tray of cubes if possible. Ice keeps swelling down from sprains, strains and the like.
- A blanket. If shock is a problem this is what you need. And, if you get stuck out in the woods you've got something to keep you warm.
- A sting kit. Yes, that's right. They take a prescription, but they're worth their weight in gold if you need one. Need convincing? In 35 years, according to Dr. John Thomas, TX State Extension, 31 people died in his state because of honey bee stings – 24 were beekeepers. Need more? What about the neighbor who comes along who *didn't* know he was allergic?
- A plastic jug of water is also good to have along. You can wash your hands if you need; you'll have something to drink; something to help cool an overheated beekeeper with, and something to put in the radiator if you need.

Even if you're with someone things can go wrong and emergency help may be needed. Here are some guidelines to follow:

- Don't panic – you *can* help.
- Check breathing – do you know CPR?
- Locate the injury exactly.
- Control bleeding – use those pressure bandages.
- How about the spine – is there pain or paralysis.
- Splint fractures if possible – anything in the truck to use?
- Get HELP – but give first aid first, then leave to call for help, then return.

When you call for help, here's what the EMS or First Responder will want to know:

- Exactly where is the victim.
- Where are you calling from, and what is the phone number, and who are you.
- What kind of accident (chain saw, injured back, etc.).
- What have you done already.
- Will someone meet the EMS at, or near the scene.
- Any problems (like the creek you have to cross on a 2" x 6" plank).
- Double check the exact directions to the scene.

I'm not a first aid instructor, and I'm not even going to try here. But by taking common sense precautions to avoid problems, and knowing what to do if something happens, you could save a life – and it might be yours.

Accidents happen. Be prepared.

•

Brady Mullinex has the tenacity of a bulldog, and he hasn't let up an inch in his quest to have the honey bee become the national insect. In fact, his insistence on this issue borders on obsession. I admire that.

But Brady hasn't had much luck so far. He's had some, though. He's got a bill sponsored in Congress, again, to make this happen. And he's got a bunch of people on the hill to support him. But not enough, yet.

Last year I tried to give Brady a hand. I suggested that, to give him a boost, readers "Send A Buck To Brady", to help defray some of the costs of his quest. And alot of people did. Some gave lots and lots of bucks to Brady. And we thank you for your support.

But Brady tells me, in no uncertain terms, that what he needs isn't another buck, but more, (and yet more) support in the Washington arena.

If you want to help bees, beekeeping, and beekeepers everywhere, Brady says to WRITE YOUR CONGRESSMAN AND SENATOR, and support HJ Res27.

I can only support and commend this activity. Write. Then write again. But I know Brady, and if you have an extra dollar floating around, "Send A Buck To Brady" anyway. He's done a whole lot for you, and me, and almost everybody who keeps bees, uses bees, or likes bees. He hasn't given up, so don't you give up, either.

It will take five minutes, cost $.29, and do a world of good. So, right now, while you're thinking of it, write your Congressman supporting the Honey Bee as National Insect, and "Send A Buck To Brady" at 330 Joyce Lane, Kernersville, NC 27284. And Thanks.

–Kim Flottum

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HOW TO DO A NEWS RELEASE

Below is an example of a news release we recommend you, or your group use this spring as swarm season approaches.

With the increased awareness the public has of honey bees and beekeeping, an announcement of this type will go a long way in easing any fears that may exist, by letting everyone know that the situation is well in hand.

Send this release (rewritten to fit your situation) to your local newspaper, T.V. stations and most certainly the police department, Mayor's office and fire department.

At the bottom, note the available information on how someone may contact your association, how to become a member, where and when you meet, and anything else we could think of as a promotion for new members. Feel free to add, modify or delete anything that doesn't sound right or won't work in *your* situation.

Oh yes, one more thing. Don't expect anybody else to do this. A newspaper will be more likely to use a release if it sees one more than once. But there's no way it will ever get published if they never see it.

NEWS RELEASE

It's swarm season again, and the (name) Beekeeper's Association wants to remind you of some of the Do's and Don'ts of dealing with a honey bee swarm should you see one in your yard or garden.

A honey bee swarm is a natural event in the life of a colony. Although they occur most frequently in the spring, you may find one almost anytime of the year between frosts.

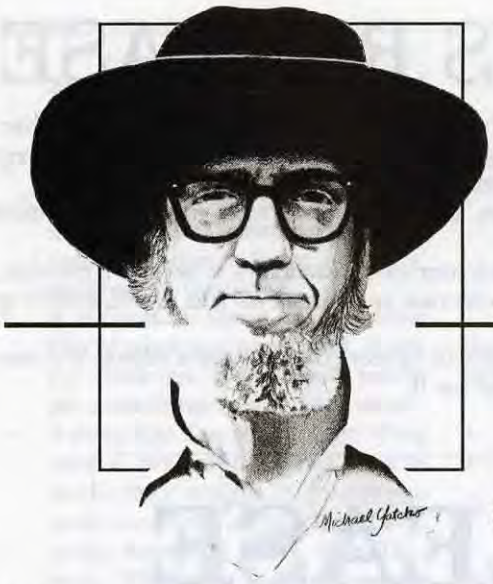
Here are some common swarm rules that (name), spokesperson for the (name) Association suggests you follow if you find a swarm ...

- Swarms are simply a group of honey bees enroute from an old home to a new one. They've just stopped to rest for the night and will probably be gone tomorrow.
- As a rule, swarms are gentle and non-aggressive. However, there are always exceptions so caution is always the rule.
- Rarely they can't locate a new home, and will build a nest right where they sit. These are typical honey combs however, and are NEVER made of paper or mud.
- If you need to know for sure, honey bees are brown or yellow with black markings. They are fuzzy, NEVER shiny.
- Don't panic, or be afraid of a swarm. Left undisturbed they rarely cause any problem at all. They are simply resting.
- Don't spray a swarm with an insecticide as this will result in aggressive behavior, and needlessly kill a beneficial insect.
- Don't spray a swarm with a garden hose either, as this seldom makes them leave, and may injure or kill many bees. It also may result in some aggressive behavior.
- Contact the police department, at (phone #), or (name), at (phone #) for the names and phone numbers of beekeepers who will remove the swarm for you.
- Remember, some swarms may come from colonies of bees managed by beekeepers, but many come from colonies located in trees, old building and the like. Do not assume a local beekeeper is responsible for this swarm.

Swarming is the natural process of reproduction for a honey bee colony. It is as common as cats having kittens and dandelions producing seed.

Watching a trained beekeeper "hive" a swarm can be a fascinating experience for you and your children. A beekeeper can explain what is being done, and why, and what will become of the bees when they are taken away.

For more information on swarming, honey bees, beekeeping, or the (Ass'n name) Association, contact (name), President at (phone #). Association meetings are held each month at the (place). Everyone is invited, there is no cost, and swarming is always a topic of discussion.



BEE TALK

RICHARD TAYLOR

Box 352, Interlaken, NY 14847

"Treating for pests and diseases is necessary, but chemical manufacturers don't always make application easy."

I get more questions about bee pests, especially mites, than anything else. I think it's time to talk about this again, especially since I keep getting reports of what seems to me a great deal of foolishness, at least as concerns tracheal mites. Some beekeepers seem to think they have to get hundreds of their bees dissected and examined microscopically from time to time to see whether they have tracheal mites, or that they should be undertaking fairly complex and time-consuming procedures to test for Varroa mites, and so on, and that they should then go in for some herculean measures to eradicate them.

So let's begin with diagnosis.

The way you're going to find that you have tracheal mites is that you'll find dead colonies in the spring with hardly any dead bees in them and, usually, plenty honey. It is as if the bees had just taken off – which is, in fact, what has happened. That is markedly different from a colony that has died over winter from some other cause. There are lots of dead bees then, and the hive is a mess.

But how, then, do you tell whether you have tracheal mites in the summer? Well, it doesn't matter much. Tracheal mites make little headway after brood rearing gets underway, and they do not affect the colony adversely during the honey flows.

Some think you should treat every colony with menthol in the fall, to get rid of the mites before the colony goes into winter withdrawal. There is no doubt that winter is when these mites do their damage. But there are problems with menthol, and I, for one, want nothing to do with it. You have to wait until all extracting supers are off the hive, and yet use the menthol while there are still a few weeks of warm weather ahead. Those two requirements are not easy to combine. Many beekeepers still have honey on their hives in late October.

My own way of dealing with tracheal mites is simple and free of headaches. I just revive any mite-killed colonies with frames of brood and bees from the ones that survived, and requeen them. That takes only a few minutes. If you can requeen with queen cells from the surviving colonies, so much the better, for you will then be requeening with a strain that has shown some resistance to the mite. And that, in the long run, is what is going to solve the problem. In time the bees on this continent will evolve resistant strains.

There are various recommended ways of testing for Varroa, such as inserting special screens on the bottom boards, shaking bees around in a jar with a bit of ether, and so on. But if you do get Varroa, the way you'll discover it is probably by finding infected drone brood. Just scrape the caps off the drone brood when you have a comb out of the hive, and if it looks okay, then you probably have no Varroa problem. Also, this mite is large enough to be visible on a bee, but more visible on a larva.

In time we'll have strains resistant to Varroa, too. The Africanized bees cope with this pest so well that beekeepers in Brazil seldom worry about it, even though practically every hive there, I am told, contains this mite.

Meanwhile, the recommended treatment is Apistan® strips, and I see nothing wrong with using these. Apistan is not very toxic, except to the mites, and apparently posseses no significant threat to health. In my January column I described how a very successful and famous commercial beekeeper manages to make just one of these strips do the work of sixteen, by departing radically from the recommended procedure, and I noted that this seems to be illegal. I had been told, by two very authoritative sources, that to use a pesticide in quantities less than those specified in the instructions is just as illegal as using them to excess. Well, that seems to have been mistaken. I have acquired the official bulletin of the U.S. Department of Agriculture and the U.S. Environmental Protection Agency, and it makes perfectly clear that the law allows you to "apply a pesticide at any dosage, concentration, or frequency *less* than that listed on the labeling." *So there.* The law also says that you can "use any equipment or method of application which is *not prohibited* by the labeling." Therefore, it seems okay to fasten Apistan strips at the entrance of the hive, so that the bees come in contact with them in their coming and going, rather than inserting them into the hive. I, and others who know a lot more about this than I do, had thought that this was illegal, too, but apparently it is not. And it obviously presents less danger of contaminating the combs.

Now, about Terramycin. I noted in my January talk that, although I have used this each spring for years, I had never yet seen any instructions, either

on the package or inside, concerning its use with bees. Calves, swine, poultry, yes, but nothing about bees, other than, in the last year or two, mention on the package that it could be used with bees. It still didn't say how. So I have all these years been going by sheer guesswork.

Terramycin comes in various formulations, "TM-25" being the one beekeepers are most likely to get. This means there are 25 *grams*, or less than an ounce, of Terramycin per *pound* of "carrier". The standard package sold by the bee supply companies is 6.4 *ounces* or hardly more than a third of a pound, so there is about (roughly) one-third *ounce* of Terramycin in that package. And that package is enough to treat about fifty colonies! What this means is that the amount of Terramycin that ends up in a hive is vanishingly minute.

Other formulations of Terramycin are "TM-10," which is ten grams per pound, "TM-50," which (I assume) is double the strength of TM-25, and so on. And the package you get, if your experience is like mine, will not even tell you which formulation you have! So there is a lot of confusion, needless confusion, beginning with combining grams, ounces and then lapsing into what is for me the equivalent of Chinese, or else into complete silence on those matters which, we are told, the law requires us to heed.

Now I have before me some official instructions, kindly supplied to me by a professor at one of the agriculture colleges. It says: "Use one level teaspoonful of Terramycin Soluble Powder per ounce of powdered sugar per colony." You will note that they don't say whether they are talking about TM-25, TM-10, or what, but I *think* they mean TM-25.

Now here, for what it is worth, is what I do. I mix a 6.4 oz. packet of TM-25, from the bee supply company, with a two-pound bag of confectioners sugar, and I go around and give about a tablespoon of this mixture to each colony, using my hive tool as a measurer. I just dust it over the tops of the brood combs; around the edges; it only takes a few seconds. Then after a week or so I do this again – I think you really need to do it at least twice. And I do this early in the spring, long before any supers go on. The bees clean it off in less than a day, probably less than an hour. It works, and it obviously presents no threat of contamination to honey or anything.

If you want more precision that this, then you should read the instructions that come with the product, provided you can find any, and provided you can make sense of them. □

Comments are welcomed. Use Interlaken address, above, and enclose stamped envelope for prompt response.

Chinese Calibration

Most beekeepers use TM™-25, which comes in a 6.4 oz. package. To use, mix the entire package with *three* pounds of powdered sugar. This will treat 50 colonies once, or 17 colonies three times, using one ounce of the mix (two rounded tablespoons) per treatment. Sprinkle on the top bars, around the edges. Sprinkling the mix on open brood will kill them. Do not treat during a honey flow. TM™-50 has 50 grams of terramycin per pound of carrier. Terrabrood Mix® is a pre-measured product containing Terramycin, sugar and soy flour.

All formulations are based on a colony receiving 200 mg. Terramycin/treatment. A colony should be treated three times at 4-5 day intervals.

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QUESTIONS? ANSWERS!

Richard Taylor

New Royalty

Q. When is the best time of the year to requeen?

James E. Constance
Mansfield, OH

A. Early spring, in my opinion. It is easy to requeen then, as the old queens are easy to find, you don't have to lift supers off, and the bees are very friendly and gentle. That is also when you are apt to be reviving, with combs of brood, bees and new queens, any colonies that have died over winter from tracheal mites or whatever.

Why Feed?

Q. Is not the feeding of sugar syrup and pollen substitute unavoidable? What about Terramycin, Fumadil-B and Menthol?

C. E. Schulz
Cadiz, KY

A. I can answer only from my own experience. I never feed sugar syrup except in the very rare case of some weak colony or nuc that I am trying to build up. The only time I tried pollen substitutes, many years ago, I found them to be a waste of money. I have never used Fumadil-B, believing that a well-ventilated hive seldom gets nosema. I want nothing to do with Menthol, (see *Bee Talk*, this month). I do use Terra, as a preventive measure, because only minute doses are needed and these can be used in early spring, long before any supers go on. In general, I am convinced that good management, aimed at having very strong colonies and plenty of winter stores, goes a long way towards solving problems.

Moving Up!

Q. Last May I tried to transfer bees from a frameless hive in which the bees had built their combs into a hive fitted with frames of foundation, using a method you had described. I turned the frameless hive upside down and set it on the bottom board, then I put the new hive with frames and foundation on top of the upside-down hive. After three weeks the queen was still laying in the upside-down hive.What did I do wrong? I've got five more frameless hives to deal with this spring.

Ken Rieger
San Antonio, TX

A. Foundation is not very attractive to bees, and as long as there was brood in the combs below, then that is where the bees were disposed to stay, in spite of those combs being upside down. I believe the colony would have moved up had there been drawn combs up above. The aim here is to make the frameless hive less desirable to the bees and the new hive attractive. Things to try are: (1) put some drawn combs in the new hive, especially dark ones, if you have them; (2) come spring, remove the bottom board from the frameless hive, so it is wide open below; (3) provide an upper entrance, directly into the new hive; (4) move any combs containing only honey up above the new hive, to help draw the bees up; and (5) try smoking, or perhaps even shaking, the bees out of the frameless hive. Once you get the queen into the new hive, then you can keep her there with a queen excluder and the battle is won. *Eventually*, even without doing these things, the bees should get themselves moved up into the new hive, gradually abandoning the upside-down combs below.

Move Home

Q. When you make up a nuc, do you leave it on the original site, or move it to a new location in the same apiary, or move it to a new apiary?

Maurice J. Walsh
Limerick, Ireland

A. You do not leave it at the original site, that is, the site of the colony from which the brood and bees were taken, for it would then become vastly overcrowded with all the bees returning to that site, the parent colony having been moved. You can, however, put the nuc *on top* of the parent colony, preferably facing the other way. I always leave the nuc in the same apiary, for at least a day or two, but it is important to stuff some grass in he entrance so that not too many of the bees fly back to the parent hives. The grass dries up and falls out in a day or two. What you want to do is keep all the younger bees with the nuc, but let the older flying bees fly back to the parent hive, which they immediately do, before you stuff grass in the entrance. This makes for easy queen acceptance.

Standin' Outside

Q. Bees are clustering in front of my two-story hive every day in April. The temperature is below normal and it is much too early for swarming. I gave them an empty super but it did not help. What makes them do this?

Joe Watkins
Columbus, Ohio

A. Tracheal mites. When mite infestation builds up in the hive the bees sometimes cluster outside and eventually abandon the hive, even in cool weather. This is why a hive that succumbs to tracheal mites usually has very few dead bees left inside. There is not much you can do about tracheal mites in the spring, except hope that the colony will survive and build up again to the point that the mites are no longer a problem.

Questions are welcomed. Address; Dr. Richard Taylor, Box 352, Interlaken, NY 14847, enclosing STAMPED ENVELOPE for response.

GLEANINGS GLOBE

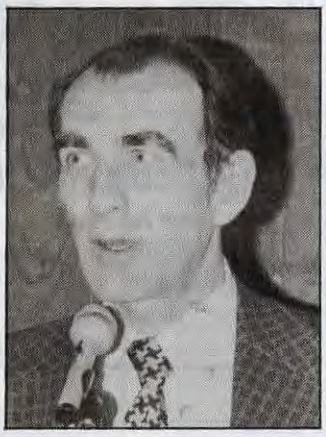
APRIL, 1991 ALL THE NEWS THAT FITS

FURGALA WINS AWARD

At the annual American Beekeeping Federation meeting, held in Mobile, Alabama in January, the Dutch Gold Honey Bear Award was presented to Dr. Basil Furgala, by Bill Gamber, in honor of his parents, Luella and Ralph Gamber, founders of Dutch Gold Honey, Inc. Steve Klein accepted the award in Dr. Furgala's absence.

The award is a bronze honey bear on a walnut base – a replica of the original model created by Woodrow Miller and W. Ralph Gamber in 1957. A $1,000.00 scholarship, in honor of Dr. Furgala, was also presented to the M.H. Haydak Fund for Bee Research, at the University of Minnesota, to be used for study and research in Entomology or related fields.

Basil Furgala was born in Winnipeg, Manitoba, Canada. He received his B.S. and M.S. in Entomology-Apiculture from the University of Minnesota. Dr. Furgala returned to Canada to take a position as a research scientist with Agriculture Canada, Ottawa in 1958. In 1967 he accepted the position of Professor of Entomology-Apiculture at the University of Minnesota. Since then he developed and taught two apiculture courses and continued his research and extension work. In 1981 he accepted a joint appointment with the USDA and acted as the National Research Program Leader and Agriculture Extension Specialist for Crop pollination and Bees in Washington, DC. After returning to Minnesota, he continued on as the National Extension Apiculture Program Leader for two years. Dr. Furgala's research has encompassed many areas of apiculture. He has published over 70 refereed scientific papers and five textbook chapters. During the past 30 years he has presented results of his research to professional and honey producer associations in over 40 states. He has received several national awards for his research work and service.



Dr. Basil Furgala (1976 photo)

The First

ATI GIVES SCHOLARSHIP

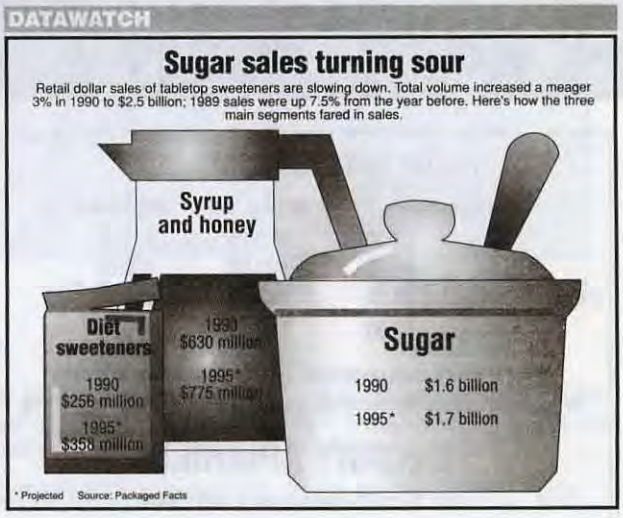
What started as a hobby has turned into a passion for David A. Dombrowski of Wooster, Ohio. Beekeeping is the passion that brought Dombrowski from his home in Illinois to The Ohio State University Agricultural Technical Institute (OSU/ATI) where he just recently received The Marshall McDonald Scholarship Fund, a scholarship which will help him pursue his degree in beekeeping. OSU/ATI offers the only two-year beekeeping program in the country.

Dombrowski obtained a bachelor's degree in Plant Soil Science from Southern Illinois University in Carbondale, Illinois, and decided to pursue a graduate degree.

Dombrowski is the first recipient of the Marshall McDonald Scholarship Fund, which was established in 1989 by Marshall McDonald of Palo Alto, California. McDonald, a mechanical engineer with Teledyne Microwave Electronics Corporation, also pursued beekeeping as a hobby. When he read an article written by Dr. Tew in *Gleanings in Bee Culture*, he was impressed with both the technical and vocational level of beekeeping Dr. Tew addressed.

"I was delighted that a major institute would approach beekeeping as a vocation and decided to help promote the program through a scholarship," McDonald said.

SEND YOUR NEWS TO THE GLOBE



From Advertising Age (Cynthia Watson)

Ohio Business Does Well

MEAD MAKER SCORES

Pamela Spence-Allen

New Woman Magazine sponsored a contest for entrepreneurial women last year. This is their announcement of the Third Place Winner – Pam Spence, of Ostrander, Ohio, and her goal to open and run a meadery.

"Mead – it was the drink of red-bearded Vikings and dark-eyed Circe; the toast of the Round Table; and the elixir of Sheba. It is the gift of the gods, imparting fertility, poetry, and prophecy." So began the entry from Pamela Spence-Allen, whose dream is to produce mead, an alcoholic beverage made from honey through a natural fermentation process (similar to the way in which wine is made from grapes).

Spence-Allen's honey of an idea began after she enrolled in a commercial-beekeeping program at OH State Univ. Though she loved working with bees, she discovered that the domestic-honey market was severely depressed, so she began looking around for other ways to use her honey. When she learned about mead, she became intrigued by its sense of history and mystery – so intrigued, in fact, that she started the American Mead Association in 1986, a not-for-profit organization that promotes the production, consumption, and appreciation of mead.

Throughout history, mead-making has traditionally been done by women. "I want to keep that knowledge alive and continue that tradition," Spence-Allen wrote in her entry. "After years of writing about mead and the successes of small commercial mead-making operations, I am ready to start my own meadery." The primary product from the meadery will be mead, of course. But because the drink must age for two years, Spence-Allen also plans on producing a line of gourmet honey products to keep herself and her hives busy. She and her husband plan on converting their garage into the meadery and building storage space for their mead

–New Woman Mag, Jan. 91

NEWS TO USE

Milk production this year will increase modestly despite a sharp drop in the price producers receive. Allan Lines, agricultural economist at Ohio State University, says average 1991 farm prices are expected to be $2 or $3 per hundredweight less than last year. Milk production is projected to rise 1% to 2%, as a modest gain in per-cow production outweighs a slight decline in cow numbers. Consumers will benefit from a lower-priced larger supply of milk and milk products. Retail dairy prices are expected to decrease as much as 5% during 1991. Lines says those lower prices will discourage milk production and drive inefficient farms and those with high debt out of business. Expect prices to go back up, possibly by 1993, once supply is under control.

This certainly begs the question, though, of what will eventually happen to all small producers, inefficient operations, and the future of the land of milk and honey.

Bob Brandi was re-elected president and Don Schmidt was re-elected vice president at the Amer. Beekeeping Federation's 48th annual convention, held Jan. 23-27 in Mobile, AL.

Mr. Brandi, of Los Banos, CA, operates in California and North Dakota. Mr. Schmidt's operation is located in Winner, SD.

Ed Doan of Hamlin, NY, was re-elected to a second two-year term on the ABF Executive Committee. Newly elected to the Executive Committee was Blaine Simpson of Parker, AZ.

They join incumbent Executive Committee members Dick Ruby, Milnor, ND; Bill Shearman, Wimauma, FL, and Dave Hackenberg, Lewisburg, PA; and Past President Reg Wilbanks, Claxton, GA.

The Executive Committee rehired Troy Fore of Jesup, GA, as secretary-treasurer.

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COUNTRY SINGLES?

We all know how wonderful country living is. We would never trade those magnificent sunsets and wide-open spaces for the hustle and bustle of city life. However, there is one problem with living in the country – it can get a bit lonely. It is difficult to meet that "special someone" to share your life with. A new dating service, "Country Singles", has developed a program for unattached rural singles to meet others who share their love of country living.

Founded in 1989 by Bob and Suzy Walsh, high-school sweethearts from Illinois who have been married for 17 years, "Country Singles" publishes a monthly newsletter which contains anonymous profiles of all of their members. The subscription fee is $20.00 for three monthly issues. The members are able to safely and easily contact each other by using "Country Singles Forwarding Service." ($1.00 per letter.)

The Walshes describe their program as unique. "We feel we're a genuinely special type of dating service. First and foremost, we pride ourselves in being wholesome and ethical. We do not publish any profile which contains sexual, religious, or racial references. We believe in the old-fashioned values of romance, love, and marriage. We are proud of our moral stand. As a result, we attract members who share our beliefs. Another thing that makes us distinctive is that we advertise mainly in rural publications, so most of our subscribers live in the country or have strong ties to rural life."

Anyone wishing a free information packet can write to the Walshes at "Country Singles", Dept. SSZ, P.O. Box 791, Arlington Heights, Illinois 60006.

SD PICKS A WINNER

Judy Gulleson has been chosen as the South Dakota Beekeeper of the Year by the state. This is the first time in South Dakota a woman has been given this honor.

She is co-owner of Prairie Hills Honey in Britton, and helps run 1500 hives. She began beekeeping in 1976 as a hobby and took over partnership in 1981.

She is also active at the state and national level. She is a member of the SD Advisory Board, Honey Queen Chairman, Honey promotion Committee and Legislative Committee.

She is SD director to the ABF, on the membership committee and has worked as a part-time bee inspector.

We are proud to have Judy as a friend and fellow beekeeper.

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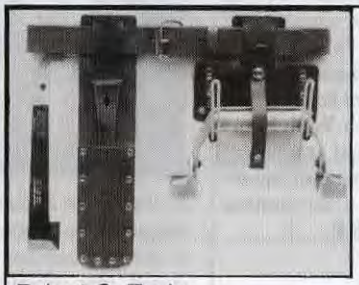

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3 Win This Year

NJ PICKS WINNERS

Edward J. Littig was presented the "Citation Award" for 1990 at the New Jersey Beekeepers Association Annual Meeting. This is the highest honor given for service to NJ Beekeeping.

Ed lives in Lakehurst, NJ and served as President of the N.J.B.A. He was greatly instrumental in preventing the reintroduction of the black bear into the Pinelands which would have been disastrous to honey bee pollination of cranberries, blueberries and other essential fruit and vegetable crops. While serving as President he flew his own airplane to each of the Branches and was a factor in convincing Essex County to join the State Association.

C.H. Joe Hansen was presented the "Citation Award" for 1991 at the New Jersey Beekeepers association Annual Meeting.

Joe served as President of the N.J.B.A. and Director of the Eastern Apicultural Society. He was designated a "Master Beekeeper" at West Virginia EAS.

Before retirement he served as Vice President of a Wall Street Investment Firm and as General Manager and Manager of Industrial Relations of a corporation listed on the N.Y.S.E.

Miss Zela Ante has been chosen Honey Queen to represent New Jersey Beekeepers.

Zela is 17 and attends the Spence School in Manhattan as a Junior. In addition to academics she is active in fencing competition. She lives in Montague, NJ with her parents who are beekeepers.

IRS CALLS AGAIN

The IRS has tax guides especially helpful for farmers. This year's edition of Publication 225, "Farmer's Tax Guide," has important changes for the 1990 tax year, along with specific info on filing requirements and due dates, farm business expenses and other topics. It also has sample tax forms generally used by farmers. Publication 51, "Agricultural Employer's Tax Guide," explains farmer-employer responsibilities, such as social security tax and income tax withholding. Both pubs are free by calling: 1-800-TAX-FORM.

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INDIANA PICKS QUEEN, TOO

At the recent Indiana State Beekeepers Assn. convention, Linda Sickman, center, from Fairmount, was chosen the 1991 IN Honey Queen. On her left is John Adams, recipient of the 1990 IN Beekeeper of the Year Award. On her right is Duane Rekeweg, president of the Assn., who was presented the 1990 Clover Blossom Award for outstanding service to IN's beekeeping industry.

NEW AG HEAD

U.S. Representative Edward Madigan of Illinois has succeeded Clayton Yeutter as secretary of agriculture, President George Bush announced on January 25. Earlier in the month, Bush named Yeutter to replace Lee Atwater as chairman of the Republican National Committee. At press time, Yeutter's departure date had not been announced.

Madigan has served in the House since 1973 and was ranking minority member of the Agriculture Committee. He was also a member of the Energy and Commerce Committee and ranking minority member of the health and environment subcommittee.

Early reports are that Madigan's appointment has met with bipartisan praise. In reacting to the president's announcement, Yeutter said, "Farmers and ranchers will be well served by Ed because he comes from a rural area and understands the needs of this vibrant and important industry. Many folks in agriculture will be sorry to see him leave the Hill, but they will be exceptionally well served with him at the Department."

BEES: POETRY-IN-MOTION

The poet strikes across the page
A hundred graceful words
Describing nature's center stage
Amid the bees and birds.

The bee man sheds his working gloves
And seeks a place serene
To read about the job he loves
In *Gleanings* magazine.

The day he's had was not and long,
The bees, heavy to place,
But in their buzz he heard a song
And in their form, a grace.

A purpose he sees in their lives,
And they bring that to his.
That's why a bee man keeps those hives,
It really always is.

You or I might lift a lid
And only see commotion.
The bee man sees beneath there hid
A poetry-in-motion!

As evening fades into the night
Hives silhouette the sky.
No poetry befits that sight –
Wise poets never try.

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Display Index

BOTTOM·BOARD

Worse Than A Swarm?

RICHARD BONNEY

On my inspecting rounds one day I went to an address where I had never been before, one where I did not know the beekeeper. No one was at home but the hive was in plain sight so I went over to inspect it. The colony seemed perfectly normal as I inspected it – a little under strength perhaps, but with no apparent problems, the type that filled most of my days. I finished the inspection, closed up the hive and, using the cover as a desk, wrote out an inspection slip to leave for the beekeeper. I turned from the hive and was heading back to the house to drop off the slip, when the beekeeper who owned the hive appeared.

"Did you kill the queen?" he asked, with no preliminary greeting.

Aha, I thought, one of those beekeepers who thinks that inspectors are nothing but trouble.

"No, I'm sure that the queen is alive and well", I said, probably stammering a little bit as I prepared to assure him that I was always careful to disturb the hives as little as possible whenever I inspected.

"That's too bad" he replied. "I always kill the queen if I find her. That way the bees won't swarm."

I just stared at him, at a loss for words.

Answering questions, giving information, helping beekeepers to improve their knowledge and understanding – these are some of the rewards of apiary inspection work for me. There are times, though, to stand and talk, and there are times to just go on your way. This seemed like one of the latter. If someone believed that killing the queen indiscriminately was an appropriate swarm control measure, it was unlikely that a few minutes of conversation with me would help much.

As I reached for my smoker and turned to leave he said, "I'm thinking about giving up the bees."

"Oh, why?" I asked, heading for my truck.

"Well, I've had them for eight years and they've never made any honey for me."

What could I say? I just waved goodbye and continued on my way.

Thinking about the incident later, I wondered if there was anything I might have said to help this beekeeper, and then decided that my instinctive reaction to leave was right. But at the same time, it might have been enlightening to me to talk with him a bit. How had he kept a colony going through eight New England winters if he killed the queen every time he found her? Perhaps he didn't find her that often. The hive did seem to be well kept, though.

Obviously, this beekeeper had no feeling for the dynamics of colony life – the rise and fall of the adult population over the year, the effects of no queen during the peak of the season, or the potential result of killing a new queen within that period of uncertainty just after a colony has swarmed, with the strong possibility that there are no eggs or young larvae on hand to make a new queen.

If I had tried to enlighten the beekeeper, what might I have said? One approach would be to give him some facts and figures. If the queen is killed today, what would happen? Ideally, the colony would select at least one, probably several, day-old larvae and start to raise them as queens. The first of these would be expected to emerge as an adult in another twelve days or so. Three or four more days, perhaps longer, would pass while that virgin queen matured in the hive and took an orientation flight or two. Another three or four days would pass until she made the first of her mating lights. Then, another three or four days until the first egg is laid.

All of this happening as described depends on a variety of factors. First the availability of young larvae or eggs in the hive. Next, the willingness of the colony to actually raise a new queen. Then, suitable weather for timely orientation and mating flights. Finally, conditions in the hive need to be such that any new queen that might be raised is of reasonable quality. This means plenty of stores on hand and a certain minimum of nurse bees. All of these conditions being met, then in about three to four weeks, perhaps longer, a new queen would mature and begin to lay eggs.

Meanwhile, what has happened to colony population? Initially, nothing. That is, everything except egg laying would continue normally. Presumably, up until her demise, the old queen was laying eggs at a normal rate for the season, somewhere in the range of 1,000 to 1,500 per day. For the next three weeks these eggs should continue to develop and mature and new workers emerge. But during that three weeks no new eggs are being laid since the new queen has not yet emerged. A three week hiatus will then follow when no brood is emerging, though older bees will continue dying off at a normal rate. Here is a loss to the colony of perhaps 30,000 to 45,000 new young bees from the eggs that were never laid, on top of the normal die-off of thousands of workers that are reaching the end of their natural life.

Certainly swarming has been inhibited, but at what cost? It is easy to see that if this beekeeper is not going to learn and practice more normal swarm control techniques, it would be better to let the bees swarm. A colony usually does not swarm every year: every two or three years is more likely. If the beekeeper is successful in finding and killing the queen once or twice a year, this is certainly a far greater setback to the colony than is natural swarming.

Richard Bonney is the Extension Apiculturist for Massachusetts. His book *Hive Management, A Seasonal Guide for Beekeepers*, was recently published by Storey Publications. He has been a beekeeper, inspector, pollinator and teacher. He knows his subject.