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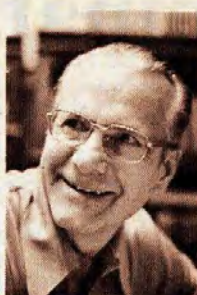
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COVER STORY

Kimberly Ganey of Jacksonville, Florida was crowned American Honey Queen at the American Beekeeping Federation convention in Seattle, Washington.



Gleanings in Bee Culture

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Created to Help Beekeepers Succeed

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The First Spring Examination

By GRANT D. MORSE, Ph.D.
121 Ulster Avenue
Saugerties, NY 12477

PART TWO SWARM PREVENTION

MOST OWNERS of one or more colonies of bees attempt to practice swarm prevention.

Swarm prevention, without greatly reducing honey production, is not the easiest goal to accomplish. If it is to be successful, and not unduly disregard honey production, it must be based on a knowledge of bee behavior.

As we pointed out earlier, a normal colony headed by a queen one or more years old which is left to its own devices, is almost certain to swarm prior to or near the beginning of the first major honey flow. For decades, beekeepers have attempted to discover some simple way to induce a colony to raise a new queen without swarming. Few, if any, have succeeded.

Some have attempted to secure new queens by dequeening and letting a colony raise a new queen. That works, but approximately a month is lost before a new queen will be laying eggs, and so such colonies dwindle and do not produce a surplus, as a rule.

About the only successful way we know to follow is to secure a new queen from some outside source, that is, raise a queen or buy one. Buying one is the easiest route. A beginner can sometimes secure a good supply of young queens by using cells from a colony that built them preparatory to swarming. Even some commercial operators are not above securing queens this way from a yard that has gotten a bit out of hand.

But many beginners lack spare equipment for nuclei. Sometimes I think a beginner's emphasis should be on letting his colonies produce some surplus brood frames, rather than concentrate exclusively on honey production. Plenty of up-to-date information on queen raising is available today. Some beginners and many commercial operators are trying their hands at it.

Many beginners say, I'll let my bees secure their own queens. They'll do it, of course, either by swarming or by

supersedure, but unfortunately by swarming in the majority of the cases. Now, in addition to providing a new queen, or in the event a new queen is not provided, what can the operator do to prevent swarming?

First, he can give room by reversing, and by adding a hivebody of brood combs, and doing so before the colony members feel crowded, or the queen lacks egg laying space. Second, he can remove all or part of the capped brood from the egg laying area. Such brood can be elevated, as

"One can imagine the work load such an enterprise entails."

by the Demaree method; or elevated to use as part of a two queen system; or given to less prosperous units, or employed to make up nuclei, and so on.

But the beginner, or the commercial operator, who leaves colonies to their own devices, is likely to be plagued by incessant swarming. Swarming pleases Mother Nature, but few others.

SUN, WIND AND SHADE

Although we know much about the needs and preferences of our bees, some of us are a bit prone to think they can adapt to almost any circumstance. This often places them under unnecessary stress.

Take the matter of sunlight as opposed to shade. Bees need to have their hive or tree nest exposed to the early morning sunlight in order to encourage their scouts to depart early in search of the best nectar sources. This is the more true because the great majority of the workers on some days may wait to decide where to forage until the morning scouts return to the nest and advertise what they recommend through a dance on one or more combs.

The bees themselves demonstrate how much they value a southern, or

south-eastern exposure for the entrance of their nest by usually choosing such a site in the wild when alternatives are available. But they like a bit of shade too — not so much as to shut off the early morning sun rays, but enough to reduce the intense glare of the sun during the mid-day hours.

The chief reason for their wanting a bit of shade lies in their need to keep the nest from overheating during the hotter sunlight periods of the day. It is then they must carry water in rather large quantities to keep the brood nest temperature from becoming too high.

The bees carry water which they place in droplets on the frames and fan it to bring about evaporation (and hence cooling). On a hot day when a hive is directly exposed to the sun's rays, the volume of water needed to cool the hive nest may range from one gallon to several gallons. Such water has to be brought in by carriers in droplets. One can imagine the work load such an enterprise entails.

From the above we can readily see the desirability of a combination of sunshine and shade for bee colonies. This is often relatively impossible. Consequently the use of a shade board placed over the hive with four blocks between the hive cover and the shade board to assure an air space is desirable. The need for use of such a board should be anticipated by the beekeeper who is not likely to be present when the shade need is greatest. One can readily see that a colony thus protected can devote more time and energy to nectar collection.

But if there is any one feature in the beeyard location and ecology that is more important than a reasonable amount of shade it is protection from the continued blowing of the wind.

Ideally, every bee yard should be surrounded on three sides (N.E.W) by a natural windbreak which is far enough removed from the hives to allow the sun's rays to reach them part of the time, but close enough to protect them from the onslaughts of

wind. Excessive and lengthy blowing of wind can discourage departure of gatherers from the hive, and in the spring it can render it difficult for the bees to maintain rearing temperatures in the brood nest.

There is little doubt that failure to provide beeyards with adequate wind-breaks has been the major cause of stress that in turn so often induces the occurrence of such diseases as EFB, Nosema, sacbrood, and others.

DANGER FROM WAX MOTHS

If you are a beginner, and have occasion to store frames of comb, either empty or containing honey, beware of the wax moth, either the greater or the lesser wax moth.

There are only two fumigants recommended to protect combs while they are off the hive and in stacks; paradichlorobenzene, and ethylene dibromide. Most beekeepers use the first of these two. It is heavier than air so should be placed about the frames on a piece of paper or cardboard. Each such application should take care of 4-5 hivebodies of combs in a stack for a period of approximately a month. Deterioration of the fumigant is more rapid in warm weather. Combs containing honey for human consumption should not be so treated.

FEEDING BEES

If the beekeeper will feed in the fall any colonies short of winter-spring stores, he will seldom need to do any spring feeding.

Most experienced beekeepers prefer to retain a few frames of honey for feeding purposes should the need arise. But if frames of honey are not available, sugar syrup made of two parts sugar to one part water (weight or volume) will do very nicely. The water should first be brought to a boil, set off the fire, and the granulated sugar stirred in until it is totally dissolved. It may be fed while still warm, but not hot, or after it has cooled.

Good sized glass bottles (one gallon-wide mouth) that will fit upright into a super and which have plastic or metal covers may be used as feeders. A few small holes should be punched into the covers. In extreme emergencies, dry granulated sugar may be fed, placing it on the inner cover where it may be reached by the bees through the hole in the center. But bees do not usually take dry sugar too readily. Also, they need water to be able to consume it. They are not always able to reach water during cold or rainy periods. I recommend you avoid feeding dry sugar if you can.

Bees should never be fed sugar with the intention of inducing them to produce honey. Such a practice encourages the belief that any or a large part of honey is so produced. Honey's image is important.

Since glass bottles often have covers much smaller than their diameters, sometimes the bottles tend to fall over when placed on the frames. Accordingly, they should be carefully placed; also, care should be taken to assure that at least one hole

in the cover of the bottle is available to the bees, not covered up by the wood of the frame.

It almost always pays to feed nuclei. Feeding relieves many of the workers from the necessity of gathering nectar and releases them to care for more young bees, thereby hastening the build-up of the nucleus force.

THE SOLAR BEESWAX EXTRACTOR

Every beekeeper needs to buy or secure foundation for new frames, or to replace old combs. I doubt if it pays, in most cases to put valuable new sheets of foundation into old frames. I'd urge that before doing so the beekeeper be assured of the likelihood that the frames will last as long as the combs built on the new foundation.

One good way to secure foundation is to trade wax for it. Commercial beekeepers usually have machinery for separating wax (cappings, scraping, old combs, bits of brace comb, and so on) from any honey they may contain. A beginner often finds a solar extractor a fast and efficient device for accomplishing this separation.

Sometimes one can buy a used solar extractor. If not, the more capable mechanic may wish to build his own.

Directions for building such an extractor, may be secured from Dr. Clarence Collison, Dept. of Entomology, Penn. State Univ., State College, PA. 16802.

Variants of the American Pussy Willow

By FRANCIS O. HOLMES
Henniker, NH

AMONG THE NATIVE willows of New Hampshire the common American Pussy willow (*Salix discolor* Muhlenb.) seems to be the best single source of early springtime nectar and pollen for overwintered honeybees.

Willows in general are notable for seedling variability and this particular species is by no means free from abnormalities of one sort or another. The enormous number of in-

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"Fortunately we have expert help at hand!"  
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dividual plants growing along roadsides and woodland edges makes it certain that some of the inevitable variants will be of a nature even more valuable for beekeepers and their honeybees than the average seedling representative of this species.

Along the roadsides within a mile

of our house more than fifty individual seedling plants of this common pussy willow are to be found. Multiplying this number by the number of miles of paved roads in the state will convince the most skeptical beekeeper that exceptionally useful variants of this already useful nectar source would be discovered if we would adequately appraise each individual plant carefully.

Fortunately we have expert help at hand! Our honeybees are much more capable than we are in the appraisal of individual plants! Several years ago I noted one plant of *Salix discolor*

on which honeybees were working with unusual eagerness. That particular roadside specimen is no longer to be found, having been killed perhaps by roadway changes; but cuttings had been obtained at the time of its first observation and these cuttings proved to be very unusual while they were being rooted indoors. Drops of water-clear liquid were noted on their leaf edges. This in itself was only mildly interesting, for willow cuttings occasionally show this sort of phenomenon. But usually the drops of clear liquid taste just like water. Only in this one case and once with cuttings of *Salix pellita* Andersson have I ever seen drops that tasted like a sugary exudate from the leaf edges.

In the earlier literature there seems to be only one published reference to nectar glands on willow leaf edges. This is in a European report concerning *Salix eleagnor* Scop. (Ost. bot. Z. 117:205-222. 1969).

The surprising coincidence of sugary leaf-edge exudates in rooted cuttings from an individual plant

observed to be favored exceptionally by honeybees while growing outdoors made this finding especially interesting. It definitely suggested the production and exudation of an unusual supply of carbohydrates from both floral and leaf-edge nectaries.

The cuttings were planted outdoors in a rather unfavorable spot and have grown only slowly. Because they have not flowered, we cannot yet judge whether a clone of cuttings derived from the original roadside plant would be useful as a beekeeper's cultivated farm crop, but that possibility remains to be tested.

Another variant individual of this same American pussy willow, *Salix discolor*, was discovered at about the same time, and it also was found to possess two distinctive differences from the average plant of the species. This unusual plant was noticed at first because it cast its winter-bud scales before the beginning of winter and wintered its catkins successfully without the protection that the winter scales are generally able to give.

From time to time the "winter-blossoming" characteristic has been found in this species of willow, although it is not at all common. Fortunately, in this particular case, cuttings of the exceptional plant were taken at once and rooted cuttings were subsequently grown in a nursery row. On one occasion the display of the winter-blossoming characteristic led to the picking of a bouquet in early springtime, before other plants of the species had cast off their winter bud scales. Even before the bouquet was carried indoors a very pleasant odor from it was noted. When taken indoors the bouquet at times could be smelled throughout the room. The winter-blooming character has proved consistent in this clone, but the odor production has been irregular in occurrence and not at all frequent.

If *Salix discolor* is common in your area, it certainly is one willow that will repay careful observation to detect the occurrence of still other abnormalities and especially of variants that may be especially attractive to honeybees.

Sourwood Honey Sells At Roadside

By CONNIE KROCHMAL
Ashville, NC

THE FORESTED MOUNTAINS of western North Carolina are an increasingly important source of honey. Produced by small beekeepers, the prime and most valued of the honey crop is that from the sourwood tree, *Oxydendron arboreum*.

A very pale straw color, and of a mild but pleasing flavor, this honey commands premium prices, and relatively little of it is produced. Keepers believe that about every fourth or fifth year there is an uplift in production.

Mountain families, kids and all, set up roadside sales areas and do a thriving business selling local honeys to tourists and travellers.



Although the famed sourwood honey is featured at this sales spot, cider, molasses and maple syrup are also sold.

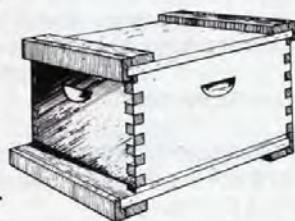
An old school bus has been remodeled to serve as a sales shop for home produced honey, as well as shrubs. Big enough to provide play area for youngsters, it is a favorite shopping place in western N.C.



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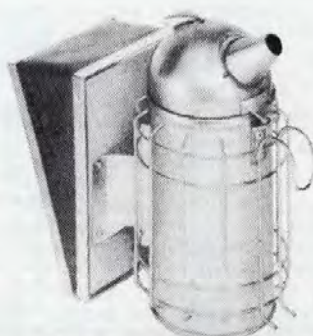
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	6 5/8"	2.90 ea.	2.65 ea.	3.45 ea.	3.35 ea.
Frames		100	1,000	100	1,000
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	6 1/4"	26½¢ ea.	25¢ ea.	30¢ ea.	28½¢ ea.



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Monthly HONEY Report

LAWRENCE GOLTZ

March 10, 1981

The following figures represent the current prices reported by beekeepers and packers over the country. They are based on reports from many states averaged out for each region. Where insufficient information is received no price is shown. The retail prices represent the price of each size jar.

Wholesale Extracted

Reporting Regions

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.
Containers Exchanged

	1	2	3	4	5	6	7	8	9
60 lbs.(per can) White	42.00	32.00	42.50		34.80	34.20		34.50	
60 lbs. (per can) Amber	42.00	31.50	42.50		33.60	33.80		35.00	
55 gal. drum (per lb.) White		.55	.56	.54		.60		.54	.51
55 gal. drum (per lb.) Amber		.50	.54			.57		.52	.50
Caselots — Wholesale									
1 lb. jar (case of 24)	26.50	20.50	24.75	22.44		23.00		22.50	21.50
2 lb. jar (case of 12)	25.00	18.70	23.25	21.00		22.00		19.80	20.80
5 lb. jar (case of 6)	30.00	22.40	25.25			24.50		24.75	23.20
Retail Honey Prices									
½ lb.	.85		.80	.73	.76	.85		.82	.85
12 oz. Squeeze Bottle	1.35	1.30	1.30	1.15	1.33	1.15		1.28	1.35
1 lb.	1.35	1.40	1.43	1.25		1.25	1.39	1.30	1.45
2 lb.	2.55	2.55	2.70	2.45		2.40		2.40	2.23
2½ lb.	3.15	3.24						3.39	3.18
3 lb.	3.80	4.25	3.29			3.60	4.00	3.79	4.09
4 lb.	5.00	4.75		4.55		4.55		5.13	6.20
5 lb.	6.00					5.20		5.89	
1 lb. Creamed								1.39	
1 lb. Comb	1.75		1.89			1.65		1.49	1.51
Round Plastic Comb	1.50	1.35	1.50	1.90				1.00	
Beeswax (Light)	1.85	1.90	1.95		1.85	1.95		1.90	1.75
Beeswax (Dark)	1.85	1.80	1.85		1.80	1.85		1.80	
Pollination Fee (Ave. Per Colony)	30.00		22.50						

REGION 1

A lot of rain in the southern part of the region and a lot of rain and snow in the northern part. Ground moisture good. Honey selling in larger packs. Bees not in good condition due to extreme winter and poor quality stores. Most bees will require feeding.

REGION 2

Most colonies reported in good condition in Maryland, gathering pollen from maples. Below average rainfall in Maryland. Some feeding. Bees have had good flights in New York and most other areas due to unusually warm period in late February. Some colonies will need feeding in West Virginia. Honey sales fair, off from last year in Pennsylvania.

REGION 3

Honey sales fair in Indiana. February and early March were moderate in temperature across region with adequate rainfall in Indiana and Ohio,



but short in Illinois. Bees active, using above normal stores. Bee clusters are good and early feeding is anticipated in Illinois.

REGION 4

Unseasonably warm weather from Minnesota through Nebraska. Early brood rearing with attendant heavy consumption of stores, which may lead to need for early feeding. Predict losses from starvation in Minnesota. Brood rearing began early. Moisture short in Minnesota, Nebraska, and adjacent states.

REGION 5

Honey sales fair to poor in North Carolina due to economy. Bee activity, brood rearing and pollen gathering began in late February. Bee loss has been light.

REGION 6

Good rain fall during February and warm temperatures in Kentucky with brood rearing underway. Only limited amount of feeding needed in most of Kentucky locations. Spring-like weather in Tennessee during February. Colonies building up but may need feeding until end of April. Still very short of moisture in Tennessee which may affect the spring flow. Honey market is normal.

REGION 7

Temperatures above normal in Oklahoma with bees bringing in pollen during February. Rainfall about 10" below normal in east central Oklahoma. Bee losses are heavy

(Continued on page 178)

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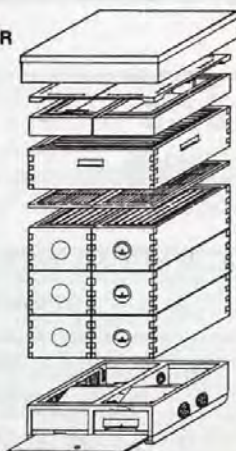
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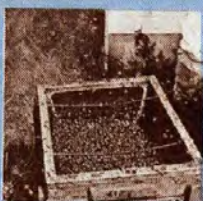
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In order to help beekeepers to benefit from the many journals available to them, the International Bee Research Association has just published a list of 130 journals from 40 countries, with their editorial and administrative addresses. This has been done at the special request of the Editors' meeting at the 27th International Beekeeping Congress in Athens last September.

The World List of Current Beekeeping Journals will enable beekeepers to obtain journals they have not read before, to learn about conferences outside their area and, when planning journeys, to visit centres of beekeeping interest. Conference organizers can introduce their meetings to a wider beekeeping public by using the List, and equipment manufacturers and supply houses can extend their advertising, and thus their sales. Many of the journals listed will provide a specimen copy, often free of charge.

The World List of Current Beekeeping Journals (L16) is available direct from the International Bee Research Association, Hill House, Gerrards Cross, Bucks SL9 0NR, England, price 2.40(lbs.), or US \$6.50, post free.

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MONTHLY HONEY REPORT

(continued from page 174)

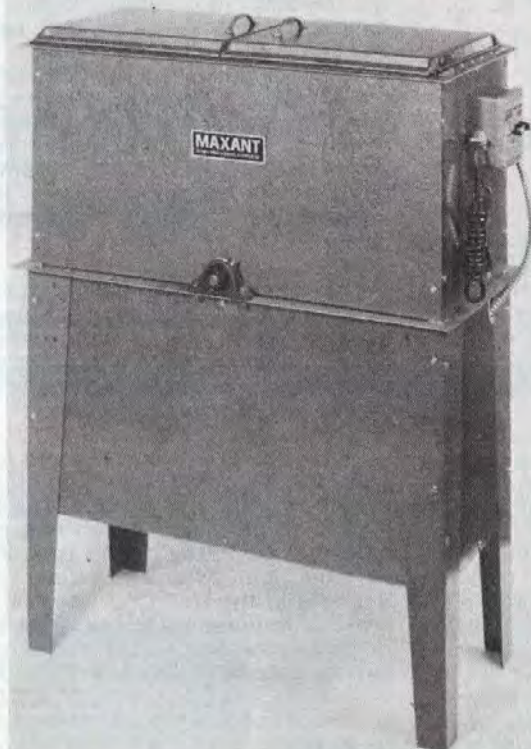
due to entering winter with small clusters of bees. No local honey available. Reportedly, much adulterated honey on road side stands.

REGION 8

Montana average production up in 1980 despite drought in eastern one-third of state, but total production down from 1979. Honey prices stable and retail demand for honey about normal in Colorado. Bees in Colorado in excellent shape and brood rearing began in February. Weather has been warm and dry in Colorado. Some feeding will be needed due to above normal amount of brood. Above normal amount of spraying expected in Colorado because of lack of winter kill on grasshoppers. Guidelines being set up between applicators and beekeepers to avoid excess loss of bees as happened in 1980.

REGION 9

Most local honey sold in Oregon. Almond bloom expected to begin about February 15th, but many California beekeepers have lost some prime almond bloom locations to out-of-state beekeepers. Trading for bottled honey very active with price for bulk honey stronger. California 1980 honey production up 35% over 1979. Mexican bulk honey offerings increase. □



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To Get Bees Out Of A Hollow Tree

By H. C. MATHEWS
Midlothian, VA

PREPARE A HIVE by putting a frame of brood having some freshly laid eggs in it. Two or three empty combs should be on each side of it so bees coming in will have some place to store the nectar and pollen they bring. The rest of the space may be filled with frames having only foundation.

Make sure that there is no other way the bees can get out of the hollow than the hole you are putting the bee escape on. This device should be attached to a hole in piece of screen wire big enough to cover the opening. The round hole in the escape must be inside toward the tree.

Attach the bottom to your hive with staples or wooden cleats. Build a scaffold to set the hive on so that its entrance will be as close as possible to the hole in the tree. Smoke the bees a little before nailing on the

scaffold, as the vibration will excite them. Keep smoking every five minutes or so while working near, and they probably won't try to sting you. Don't let 'em forget who's boss. Smoke must not be hot. (Stuff some green grass or leaves on top of the fire in the smoker.)

Check after a few days to see if the bees have started to raise queens from some of the eggs that were in the brood comb you put in the hive. The queen cells look something like small peanuts hanging down from the side of the comb. Check again after two weeks to make sure a queen was raised.

At this time it is well to examine three frames from each side of the hive. They may be full of honey if the weather has been favorable and there was a strong colony in the tree. If the 6 frames are full or nearly, better take

the hive down than put on supers. You've got to bring that thing down the ladder, you know. If you do remove it, replace with another, using the same methods you did with the first. Do all this on a nice day when the bees are flying freely. When you take the old hive down, put a piece of screen on the top and at the entrance so the bees will have plenty of ventilation and will not smother. Carry it to the permanent location at least a mile away.

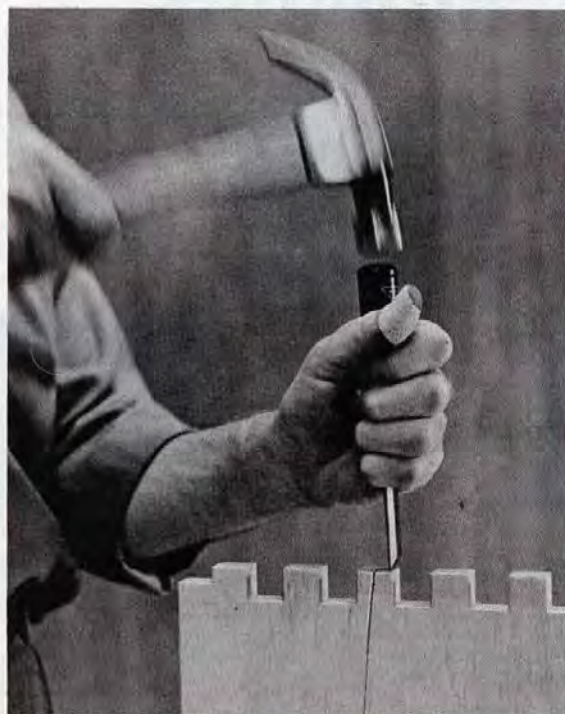
The other hive you have prepared must be put in place right away, because there will be thousands of bees coming home from foraging and they will be looking for a place to put their booty of nectar and pollen.

Leave the new hive at the tree for a couple more weeks, then pull off the screen with the bee escape. The few remaining bees and queen can now be destroyed in the hollow tree. Plug the hole tight. After a few days open the hole in the tree. The bees in the hive will transfer the honey in the tree to their new home. Let them have several days of good weather for this.

Just about dark, so all the bees will be at home, take them away as you did with the first hive.

That's it. Good Luck!

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IN HIS BRIEF prologue accompanying his **How I Heroically Caught a Swarm Contest** entry, Bob Seger of West Chester, PA, writes: "It is not without fear of ridicule and scorn that I'm going to share this event with you. I've found that truth is stranger than fiction, so I want to share an event that actually happened to me. Possibly it doesn't qualify for your contest as I...well, maybe it's better if I start from the beginning."

(In a moment! The panel of judges responsible for selecting winning entries should never be accused of heaping scorn and ridicule upon contest entrants. The panel exhausted its supply on the Pittsburgh Pirate bullpen last August. Nor can the panel be faulted for dabbling in such metaphysical questions as to the relative strangeness of truth or fiction. Or, for that matter, plain or barbecued potato chips.)

What follows is the entry by Bob Seger, co-winner of the **Second Annual How I Heroically Caught a Swarm Contest**. From the beginning:

Last fall my old and faithful bee-dog, Langstroth, passed on to the big honeypot in the sky, leaving me with no natural method of capturing swarms. I know I should have started training a new bee-puppy right away but, darn it all, losing a faithful bee-companion is kind of like getting your *Gleanings* with the staples off-center.

However, this spring I met old Hiram-the Hermit coming to town to buy new batteries for his transistor radio. Hiram had heard that I was in the market for a bee-puppy. He had brought to town with him the cutest little puppy my eyes had ever laid hands on. Hiram said that his mother was a Husky, which gave him a thick bee-resistant coat, and that his father was a grizzly bear, which gave him a natural instinct for bees and honey. It also helped him to climb trees. Well, I don't mind saying that I fell in love with that little beggar. I uped and traded my blue-eyed nanny goat for that bee-puppy faster than you should shake a stick. The pup was a smart one, though a bit on the clumsy side. The training was quick and we were happy to hear about a swarm of bees down next to the creamery.

Off we went with the usual equipment: A small woven basket, a piece of cardboard, a stick with a string on it, and a full smoker. On the way we stopped by the bakery and got a honey-glazed doughnut.

The method wasn't anything unusual. It's the same method used hereabouts in Chester County since Hector was a pup. Simply enough, you place the square of cardboard on the ground near the swarm. Then you place the doughnut in the center of the square. Then you put the basket (bottom side up) on the cardboard and lift the side nearest a bush (or other natural cover) and put the stick longways between the basket and the cardboard. This raises one side of the basket off the cardboard by about

"Hiram had heard that I was in the market for a bee-puppy."

half a hand. Then you hide behind the bush with the other end of the sting in your hand. Some say a green string is best.

(The reader should not confuse the Chester County technique for capturing honeybee swarms with a similar method commonly used for catching snipes. Most snipes are taken at night. A burlap bag is substituted for the woven basket, and, as anyone knows who has been left holding the bag, the bait is not a honey-glazed doughnut. Indeed, the similarity of techniques so moved the panel of judges that three hours of snipe-hunting stores bored the dinner crowd at the Colebrook Tavern where the panel was deliberating.)

Before long a few of the scout bees find the honey-glazed doughnut. They aren't supposed to eat any but sometimes they try it just to make sure that the baker used real honey. Then they go back and tell the lady bee. She comes down for a snack and, of course, the rest of the gang follows her down.

The rest is history. I yell "Tally Ho" to the bee-puppy and pull on the string. The basket falls on the swarm

and the bee-puppy jumps on the basket, keeping it from flying away. As I said, that is the time-honored method of catching a swarm in Chester County.

But it didn't exactly work like it was supposed to. I was so anxious trying to keep one eye on the bee-puppy, one eye on the basket, and one eye on the gathering crowd that always likened my catching a swarm to be as good as any circus. But the lady bee did take the bait, just like she was supposed to. The swarm came down the tree and hugged all around her, just like they were supposed to. I nodded to the crowd, flashing one of my famous smiles. They became quiet for they can always tell when the moment of truth arrives. I gently tug the string and yell, "Tally Ho, bee-puppy, go get them bees!" The little bee-puppy bounds out from behind the bush and jumps on top of the basket. All four feet slide down the sides of the basket and there he was, high-centered!

The swarm was so big that there were still a couple thousand bees that didn't fit beneath the basket. These extra bees were buzzing around bewildered and a little angry. They attacked the bee-puppy and got their stingers all caught up in the thick double layer of hair. When they tried to fly away, they picked that bewildered bee-puppy up and flew all the way up to the crotch in the tree. The bees finally worked their way loose and left the little beggar hanging on to that limb for dear life. He couldn't move forward or backward. His chest and forepaws were caught in the crotch and his little hind feet were waving in the wind like laundry on the clothes line. I had to think fast before the puppy worked himself free and fell two stories. I mean they were two stories!

You can see it coming, can't you? I grabbed my smoker and lit-up the gunny sack material and started to pump it like crazy. Fortunately, there was no wind and that smoke made a thick pillar of smoke right straight up to the pearly gates. That little bee-puppy grabbed hold of that pillar of smoke and started to climb right down. When he had gotten about halfway down, I had used up all my gunny sack material and the smoker petered out. I leaned over to inspect the smoker when the dog landed on the back of my head and pushed my nose right into the spout of the smoker. I grabbed the bottom of the smoker to pull it off my nose and I burnt my fingers on the can. I fell over

(continued on page 193)

Research Review

By DR. ROGER A. MORSE
Research Editor of *Gleanings*
Professor of Apiculture
Cornell University
Ithaca, NY 14853



The 1981 Gypsy Moth Spray Program

ABOUT FIVE million acres were defoliated by the gypsy moth in the northeastern states last year. The insect is widespread in the country though it is that area that suffers the most. In many areas natural biological control serves to keep populations low.

It is still not clear how many acres may be airsprayed because of this pest this May and June. It appears that the federal government has lost interest and may do no spraying at all. In some states spraying may be under the control of towns and cities, not a central agency. This could lead to complications.

The pesticide beekeepers fear most on gypsy moth is the 80's formulation of Sevin. Fortunately there are good alternatives. BT, a biological control agent gives good control if properly applied. However, the list of what might be used is long. If one is approached about an airspray it is important to determine what will be used. I feel it is possible to control the gypsy moth where it is a serious pest and still protect honeybees.

Two New Federal Publications

USDA Agricultural Handbook 335, *Beekeeping in the United States*, has been extensively revised. Thirty-two authors participated in preparing the 193 page publication. Chapters in the handbook discuss a wide range of beekeeping topics including: The price support program, bee diseases and bee behavior. The handbook carries the date October 1, 1980, but became available only in February, 1981.

A second publication is entitled *Controlling the Greater Wax Moth*, Farmers' Bulletin Number 2217. The author is Dr. H. Shimanuki, who is in charge of the Bioenvironmental Bee

Laboratory in Beltsville, Maryland. This 12-page bulletin discusses the use of paradichlorobenzene, ethylene dibromide, carbon dioxide and heat and cold for wax moth control. It will be a very useful reference.

Both publications are available at no charge, but only so long as the supply last, by writing: USDA-SEA Information Staff, Washington, DC 20250. When the free supply is exhausted the handbook will be available for \$6.00 and the bulletin on the wax moth for \$1.00.

Bees at Bird Feeders

Five people phoned me on February 18 and 19th and complained that their bird feeders were covered with honeybees. The bees were devouring the corn and sunflower seeds they said. We were having an unusually warm spell. Each year I receive a number of such calls, but they usually come in late March and April, not February.

Why would bees be at a bird feeder? The answer is very simple. It is their nature to collect pollen as early as possible in the spring. Of course, there are no flowers in bloom in February in New York State, so the bees were doing the next best thing; collecting dust the size of pollen grains. It is of no nutritional value to them but this does not stop the bees from making the effort.

Professor Karl von Frisch, who has written so extensively about honeybees behavior, has found that bees have a "Threshold of acceptance". When nothing in the way of natural food (pollen) is available that threshold is reduced to the point that they will collect any dusty substance of the right particle size. Bees have been known to collect sawdust, coal dust, or road dust and to work on dust around feed and grains mills. Bird feeders have been a favorite target for many years.

One year, as a joke, I went to our or-

nithology (bird) laboratory to investigate bees at their feeder. I knew full well why they were there but I was a bit irritated by the fact that despite my explaining the situation year after year, there were repeated calls. Upon arriving I looked at the bees, spoke a few unrecognizable words, waved my pen over the feeder and guaranteed to the laboratory directory that the bees would be done within a day. Sure enough, the next day they were gone. I had known they would be because I had noticed that the skunk cabbage, our first natural source of pollen, was about to open. The crocuses were about to bloom, too. I knew that as soon as these flowers opened the bees would abandon the unnatural sources of food. Honeybees prefer natural sources of food over unnatural ones; I know of no exception to this rule.

Many beekeepers, especially those who live in cities, will frequently be plagued with complaints about bees at bird feeders in the spring. It is important for such a beekeeper to keep a half or one-pound jar of honey handy to give to the complainer while explaining the situation.

Those who wish to delve deeper into the behavior and biology of bees and their thresholds of perception and acceptance will find the book, *Bees, Their Vision, Chemical Senses and Language*, by Karl von Frisch, most enjoyable. It is available from: Cornell University Press, Ithaca, NY 14850, in paperback for \$3.45.

Book Review

Austinite Margaret Knox's fascination with honeybees and their remarkable feats led her to write an entertaining and informative book that introduces youngsters to the intricate world of a honeybee colony.

A cooperative, family project, *Betsy's Bee Tree* is fully illustrated by the author's daughter, Patricia K. Partridge, who imaginatively depicts various aspects of bee life.

Betsy's Bee Tree, by Margaret Knox, illustrated by Patricia K. Partridge. Ages 4-10. 32 Pages, full-color, \$7.95. Shoal Creek Publishers, P.O. Box 9737, Austin, TX 78766.

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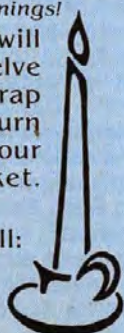
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Grand Beehive Exhibition

By WELDON V. MOORE
Salt Lake City, Utah

A grand display of over two hundred objects depicting the "skep", the early beehive, were collected by Hal Cannon and Alan Dodworth assisted by the Utah Arts Council. The public display ran from September 13th thru October 19th of 1980.

Bound For Smithsonian

Thousands viewed the unusual display at the Salt Lake Art Center in downtown Salt Lake City, coinciding with the Utah Arts Festival. The "Grand Beehive Exhibition" will be on display at the Smithsonian Institute in Washington, D.C. at the institution's Renwick Gallery from April 24th to December 6th 1981.

Utah The Beehive State

The symbol of the beehive is the official symbol used since territorial days when Utah was known as the State of Deseret. Cannon said the use of the beehive extends back several thousand years when the symbol was used on pieces of coins by the Jews and the Greeks. The word Deseret to most Utahns means Industry. He also states that the beehive is the symbol of "Cohesive Social Order", a protective facade that houses many bees. The bees in the hive work for the welfare of the colony and not for the good of self.

Over 200 Objects

The exhibit embodies a wide variety of folk art commercial are objects. All of the objects are designed in the form of the early "skep". These images are to be found on tapa cloth, quilts, and pillow cases, tombstones, coffins, steel fences, totem poles, excutcheon on doorknobs on the Salt Lake Temple, Church of Jesus Christ of Latter Day Saints, bedsteads, pop bottles, stained glass, murals, letterheads, salt and pepper shakers and for the cover of the **Deseret Alphabet**, first book printed in 1868. A commemorative beer mug created by the Pabst Brewing Company in 1897 honored the 50th anniversary of the coming of the Mormons to the Salt Lake Valley. The Hotel Utah enhances the table linen and table settings with the emblem as well as the large neon skep symbol which for many years capped the roof tower of this world famous hotel. The skep symbol has been used in literally hundreds of other places and in many



different kinds of businesses, clubs and organizations for many years.

Beehive History

Seventy three Page Book

The University of Utah Press published a colorful and informative book which is now on sale at bookstores, the Salt Lake Art Center and the Smithsonian. The book includes 36 color and 35 black and white photographs and a 16 page text by Mr. Cannon, Director of the Utah Arts Council's Folk Art Division. This 8" x 8" paperback is marked to sell at \$9.95.

Respondents From Many Parts of World

Nearly 500 cards were mailed to various respondents asking for artistic contributions, so in addition to much work and research in other media, about 100 cards were returned through this common correspondence art practice, said Allen Dodworth, Director, Salt Lake Art Center.

"The beehive symbol has long affected political and religious history," Mr Cannon said. The form of the beehive which appears in Utah Folk Art is a woven half sphere whose use in Europe dates back to the Middle Ages. The early Catholic Church chose it as an emblem of perfect social order. The Masonic Order adopted the symbol and the early Mormon settlers to Utah chose the symbol to represent the perfect kingdom of God on Earth according to Mr. Cannon. The Mormons who settled in Utah often thought of themselves as worker bees, building the New Zion under the all-seeing eye of God. Brigham Young, their leader, was likened as the beekeeper. Later on, as more non-Mormons entered the mainstream of building the West, the beehive symbol gradually became less of a religious symbol as its use appeared more and more in commercial advertising.

Fun or Philosophical

Hal Cannon is a young man with intense interest in folk art, antiques and early historical activities. Since graduating from High School, his interests have taken him into folk art and folk music and the early West. During college days at the University of Utah and the Rhode Island School of Design at Providence, R. I., he became interested in antiques. He bought and sold wooden yarn spindles by the thousands, which were made saleable for decorative objects. The profits from this and other similar projects were used to finance his study of Journalism for an MA degree.

The booklet, **The Grand Beehive** compiled with an introduction by Hal Cannon.

The article prepared by Weldon V. Moore, lifetime beekeeper in Utah and Idaho.

Photographs by John A. Lund, Salt Lake City, Utah.

Hal Cannon, author of the booklet, "The Grand Beehive."



Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT 05753

THE PAST YEAR or so, I have been invited to speak at a number of Garden Club and beekeeping meetings, on the subject of bee venom and apitherapy. It is indeed most encouraging to see an increase of interest in the health value of bees and beekeeping. For much too long we have let critics that know nothing about the subject belittle our experiences in the field of apitherapy. Strangely enough, beekeepers themselves are often "non-believers". Again, it is mostly because of a lack of knowledge and experience. For this reason I believe talks on this subject at meetings is of great value to make beekeepers aware what wonderful "pharmacists" honeybees are. And Mother Nature, with her plants and flowers, nourished by soil, water, air and sunshine is the greatest laboratory on earth, to create all the infinite forms of life that exists today.

Most encouraging is the active interest some beekeepers are taking in

the field of apitherapy and starting to work with bee venom, pollen, propolis and other bee products, to help those that cannot find help any other way. After all, if it is harmless, effective and cost almost nothing, what does one have to lose? Even if it doesn't help, it is not going to do any harm. This does not mean apitherapy should replace other necessary therapies, but it can well be a helpful addition in many cases. We hope with time this interest will grow and spread into the medical field.

I recently received a letter from a beekeeper in Australia. For the past 5 years or so, European foul brood that apparently has been unknown there, has now become a plague that has spread all through the country. For several years, the spread of this disease has instigated embargoes on the movement of bees in the country. Since migratory beekeeping is a must in Australia, needless to say, the embargo failed completely. EFB along with drought apparently has cut the production of honey in Australia so that it no longer has any surplus to export. In fact there is even talk of im-

porting honey. How fortunes of beekeeping change in just a few years.

Unfortunately, apparently the "official" method for controlling this disease now is burning equipment and combs and feeding drugs. Again, with EFB, this method of control is doomed to failure, so far there is no drug that I know of that will control EFB to any effective extent. With drug treatments, unlike AFB, it will always manage to return, unless there is some new drug more effective than those now used. EFB is an old story in the U.S. In the East, about 80 years ago or so, EFB was a serious plague with many beekeepers losing $\frac{2}{3}$ or more of their colonies in just a few weeks. In those days, burning was also tried with no success. Nor were drugs used before the days of antibiotics. It was discovered soon after that the Italian strain of bees in those days of almost 100 years ago, were strongly resistant to EFB, while the old black bee then in use was highly susceptible. It didn't take long for the old black bees to be replaced by the Italians that have kept this problem of EFB in the US from becoming serious until just lately. Interestingly enough, EFB is a problem not only in Australia, but also in parts of Mexico, and Argentina. Which in itself makes an interesting story.

Of course, the life of beekeeping is and always has been a series of "disasters", like disease, spray poisons, poor crops, etc. Another plague now getting a start in some

(Continued on page 193)

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Bee Talk

By DR. RICHARD TAYLOR
Trumansburg, NY 14886

FOR QUITE AWHILE now I've been talking about all sorts of things connected with bees, but I haven't said much about bees. So with spring coming on I'd like to talk about bees again.

I'm going to raise a subject I've talked about before, which ordinarily I try not to do, but this one is important to lots of people. I want to talk about shook swarming as a way of getting big crops of comb honey. This is something people ask me about wherever I go.

But before I say another word about that, I have a request to make. I would like everyone who has tried this system to write and tell me how it worked for them. Just a line or two will be all right. I will respond to every letter I get. I have, over the years, gotten many comments on this system, but I haven't really kept track, and I would like to know more. So, please write.

The shook swarm system consists essentially of creating your own swarm. It has been used for probably a hundred years as a swarm control method, but it was only in the last twenty or thirty years that it was developed into a method of raising comb honey. The advantages of the system are that you can get very large crops this way and, equally important, you can use it to raise comb honey in secondary beekeeping areas where quality comb honey cannot be raised by ordinary methods. It is one of the axioms of comb honey production that you need fast, heavy honey flows. Well, that is certainly ideal, but even without these optimum conditions you can do pretty well by the shook swarm system. A reader in New Jersey (whose name I have regrettably lost) wrote to me a year or so ago to say he had never been able to raise comb honey there until he started this system.

Now I'll describe how it works, adding a few refinements and details that I have picked up since the last

time I talked about it, which was a long time ago.

About the time the dandelions are beginning to bloom well you go up to a strong (repeat, **strong**) colony that you think might swarm unless you do something about it. Maybe its got queen cells, maybe not, it doesn't matter. You turn that colony around facing the opposite direction, and move it back so it is right behind where it was. Then on its original stand you put a bottom board and a shallow super (it doesn't matter which depth of shallow super) with nine (9) frames of foundation, not drawn comb. (That is important). On top of that you put a queen excluder and two or three comb honey supers, depending on how strong a flow you expect. Then add inner cover and outer cover.

"Now I'll describe how it works..."

Now start removing combs from the original hive and, holding each one vertically, you give it a gentle shake right in front of the shallow super, dislodging most of the bees. Move right along, one frame after another, but as you do, keep your eye out for the queen. Make sure she goes into the shallow super too, with the other bees you are shaking from the combs. What I do, when I see her, is gently pluck her from the comb and run her right in, to make sure she goes in. No queen has ever stung me doing this.

Keep on doing that until you have most — maybe two-thirds — of the bees shaken from the combs. As they accumulate in front of the shallow super they start moving in, same as they would if they were a natural swarm, especially once you have the queen inside.

When you've finished with that,

which doesn't take but a few minutes, get the combs back into the hive they came from, and give them a new laying queen. I do this by removing the cork from the candy end of the queen cage and laying the cage screen down over the top bars. If there were queen cells on those combs, then of course there is no need to give them a new queen.

Now look at what you've got: A very shallow hive with no drawn comb and lots of bees. So the bees occupy the supers at once — provided you shook enough of them. There is no brood or comb down below to attract them there. And they start drawing comb and putting honey in the supers right away, because there is nothing else to do with it — no brood to feed. And (here is the important point) there are lots of field bees there to gather your comb honey crop, because all the field bees from the original hive, including those that were out gathering nectar when you performed this operation, go to the new shallow hive. The original hive has been turned around, and the bees go back to where their entrance was.

If the season is a good one, you will have to add more comb honey supers, as you harvest the first ones. After you've gotten your comb honey crop, before the summer is over, and while there is still time for the bees to gather winter stores, you remove the last of the comb honey supers, set the original hive back on its original stand facing the way it did before you shook swarmed it, and put the shallow extracting super, now filled with brood, on top of it. The brood hatches out, the super gets filled with honey, and the extra queen sooner or later disappears — you hope it's the younger one that survives. The bees, meanwhile, soon get used to this latest change of entrance location. The combs in that shallow super will have become darkened, from brood rearing, but you can extract the honey if you want to, or leave it there for winter stores.

That's a wonderful way get lots of bees into the supers fast. There is, however, one problem you'll have to watch out for. About a third of the time the bees you have shook swarmed will swarm right back out the next morning. You can solve that problem either by clipping the queen or by putting another excluder **under** the shallow super, after you are sure the queen has gone inside. Then the bees, even if they swarm, will go back to the shallow hive, and stay put. If

(Continued on page 190)

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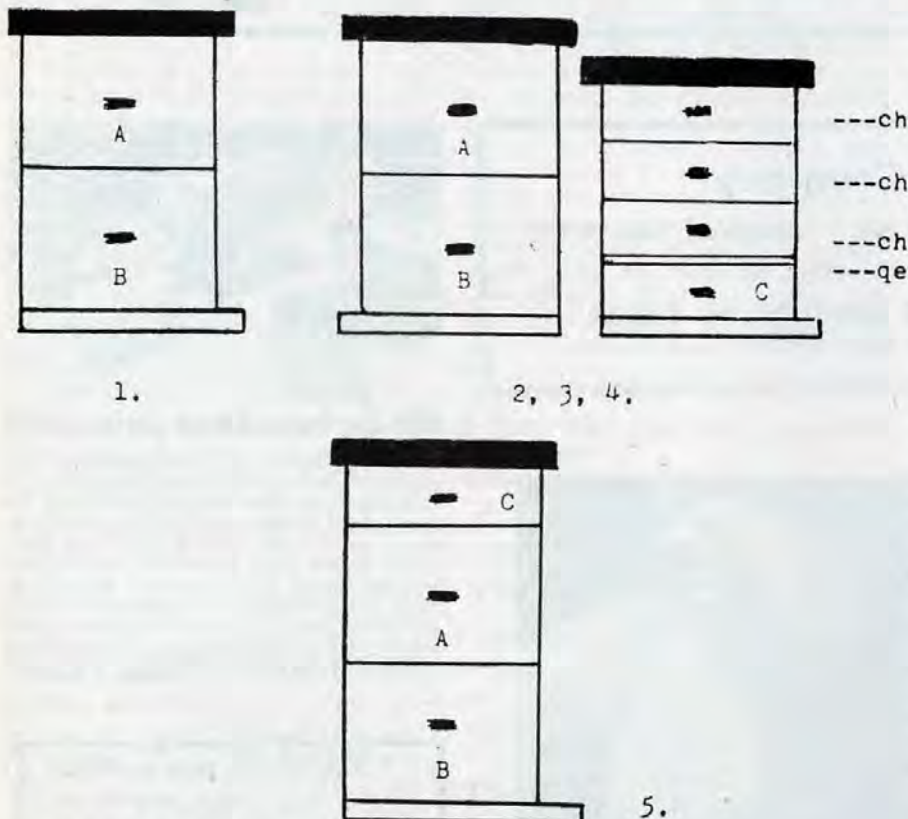
BEE TALK

(Continued from page 188)

you use the bottom excluder, be sure to remove it after a day or two; otherwise it will become clogged with drones.

Another thing you can do, if you want to, is shake virtually all the bees from the original hive, and then set the hive bodies that are filled with brood and honey on top of other colonies. Or, you can set them on other colonies with a queen excluder underneath, and then in an hour or so, when the bees (but not the queen) have come up to take care of the brood, you can set them off onto a

From *How To Raise Beautiful Comb Honey*, copyright Linden Books, Interlaken, NY.



Shook swarming into a shallow super:

1. Select a strong colony [AB] that seems likely to swarm if preventive measures are not taken.

2. Set that colony immediately in back of its original stand, and facing in the opposite direction. In its place, on its original stand, place a shallow super [C] fitted with nine frames of foundation, on top of which put a queen excluder [qe] and three comb honey supers [ch].

3. Shake most of the bees from the parent hive [AB] in front of this shallow extracting super [C], including the queen, preferably clipped.

4. Requeen the parent hive [AB] on its new stand just behind its original stand or [less preferably] let them raise their own queen.

5. After the comb honey has been harvested, return the parent hive [AB] to its original stand, and facing as it was originally facing, and on top of it place the shallow extracting super [C] that has in the meantime served as a brood chamber. Foraging bees from the parent hive [AB] will find the entrance which has been turned around, the extra queen will be deposited, the brood from the shallow super [C] will all hatch out and be replaced by honey, which can be harvested.

bottom board, give them a new queen, cover them up, and you've got yourself a new colony. Doing that will also prevent the colony whose bees you draw off from swarming.

So it is a pretty good system, and not as much trouble as it may look like. But you do have to start with a strong colony, early and then make sure you shake plenty of bees — you can't be half-hearted about it

Now I hope you will let me know how you make out, or have made out with this system in the past. I do want to hear from as many readers as possible, and I'll write back. □

Dividing Bees

By CLARENCE KOLWYCK
Cattanooga, Tennessee

IN THE SPRING, apiaries, large and small, are very often increased by division in various ways. Over the years I have settled on a method particularly satisfying, especially when new combs have to be drawn.

Only strong colonies that have wintered well should be used. In my area a standard hive body and one shallow super are considered sufficient for wintering and for the queen's laying capacity.

During the winter the new hive will be completely assembled. Then during a very cold spell the hive to be divided will be moved to the location for the new hive. Of course, if the distance is more than two miles, it can be moved during warm weather.

By March 1, stimulative feeding should be instituted to produce maximum egg laying. Then about April 1, the new hive body with foundation should be inserted between the hive body and super and feeding increased. By May 1, the combs in the new hive body should be completely drawn and the queen should be laying 6 to 8 central frames. If the outside combs are not freely drawn, they should be inserted into the center of the hive body.

About May 1, dividing time will have arrived, provided a queen has been ordered from a southern breeder. The queen will likely be found laying in the new hive body, whose frames will be completely drawn — all worker cells and no drone cells, beautiful to see. If not found there find her and put her there. Set the old hive aside and pull out the new hive body and completely assemble the new hive on the stand where the old colony was located and remove the old colony to its original stand, or where the old colony was located and remove the old colony to its original stand, or wherever it is desired. Then introduce the newly ordered queen in the old hive.

Add supers as needed on the new hive and feed for a short time if the main honey flow has not started. In a recent experiment, the new hive produced 100 pounds of honey and the old hive produced 50 pounds the first year, which was above average for my area.

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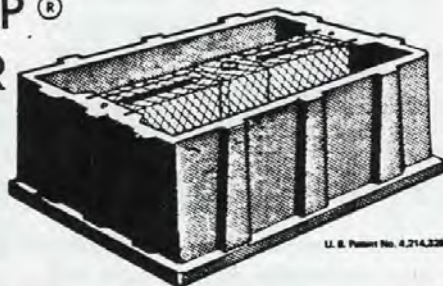
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Notes From The Straw Skep

By BESS CLARKE
50 Lycoming Street
Canton, PA 17724

LATE LAST fall, in an energy-conscious mood, we added a vestibule to the back entrance of our house to offer some protection from the north-west winds which whip around the corner. It has been very effective in making our family room more comfortable, and we feel sure it has helped in fuel conservation too, although we don't have any figures to prove it.

I was especially pleased with the new shield against the elements because the chair where I spent many hours every day is just a few feet from the door, and in previous winters it has been a cold and drafty place, especially if I was typing while Bill was carrying supers to the basement for repair and refilling.

Why didn't I move to a warmer location? I don't really know, except that this spot is convenient to the telephone, kitchen and television

set. The light is good and my supplies are near at hand. And I can see the bird feeder simply by raising my head. It's been good to be warmer this year than I have during previous winters.

The added space is only 5 by 8 feet but it has given us unexpected values. Bill made a functional rack to hold our cross country skis so they are immediately available when the first snow flake falls and, more importantly, they aren't falling out of corners when we walk past them.

The vestibule is a convenient place to set a kettle of soup, or the roaster pan, or other bulky foodstuffs which need to be cooled. It magnifies the light of our outside door fixture making it look more inviting. We will have to maintain vigilance to keep it from turning into a catchall.

The space has large areas of glass which gives us a greenhouse effect and we are already anticipating the taste of the early tomatoes we plan to

grow in it. As soon as we get home from our annual expedition to Florida we will purchase a couple Tumbling Tom Tomatoes, plant them in a hanging basket, and suspend them in a corner of the vestibule. We should have tomatoes by the first of June! We expect to start some of our garden seeds, too.

I might as well confess that the cold weather caught us so there is still work to be done on the project. We used transparent plastic as a temporary measure; painting had to wait for warm weather; and we will lay a flagstone floor; but in the meantime it has been functional.

Every now and then through the years I have made up a batch of honey butter but it evidently has been a long time since my last effort. During a recent visit to the home of our friends, the Gambers, Luella served it to us and we were reminded of how delicious it is. I came right home and mixed a batch, and then another one. We've shared it with others and they are enjoying it too. So, if you haven't made any for awhile, do mix up a batch. We, Luella and I, used two parts of creamed honey to one part butter (this is one place where butter really does make a difference) and beat them together until the resulting blend was light and smooth. It should be refrigerated to maintain quality. We found that the creamed honey makes a better product, with less separation than liquid honey. A good variation has cinnamon added for flavoring. □

Gleanings Mail Box

Dear Editor:

Your February issue of *Gleanings* was a Godsend to me. I am one of those hobby beekeepers with a few hives (5 years) that can't afford an extractor. I also tried making an extractor with a 20 gallon can. But my idea was a top drive for power and it did not work. In February Issue the plans for making an extractor appealed to me so I set out and completed one. It works beautifully. I am overjoyed with the work and money it saved me. The one major change I made was instead of searching for a 12" pulley I had a transformer I hooked up thus allowing me to control speed at will. Thank you all, including the original plans by Bill Peggler.

Carl Q. Gitto
Red Bank, NJ.

Dear Editor:

Your 4½ page article in February *Gleanings* (page 81) on the Two-Frame Extractor by Mel Kirkwood has attracted my attention for several reasons, principally its lead poisoning potential. Both the extractor container and the uncapping tub contain a large quantity of lead, which modern medical science considers highly dangerous to the human circulatory system. Hence we strive to stainless steel containers.

Another question is the cost. If the author considers his time worth \$1.00 to \$2.00 per hour, couldn't he buy a new one of equal capacity for less money?

This brings up a subject that has always puzzled me. Why does every two-frame beekeeper insist on a motor driven extractor? I am 80 years old and have a three frame extractor of 1925 to 1930 vintage which will carry three brood size frames or six extra shallow (section depth) super frames. It is so geared that I can break combs well-wired on three ply foundation. I do not find the physical exertion strenuous.

I can fully appreciate Mr. Kirkwood's desire to save money by exercising his mechanical skill but I do question the use of lead containing vessels.

Clarence Kolwyck
Chattanooga, TN

(Continued on page 194)

For more information write:

Commercial Beekeeping

The Ohio State University

Agricultural Technical Institute
Wooster, Ohio 44691

SIFTINGS

(Continued from page 186)

countries is the Varroa mite. A friend of mine in Germany is in the heart of the Varroa mite infestation with his own bees. He is now doing research for the control of this mite with his own bees with some interesting results.

As far as we know, the mite is a "new" pest to European honeybees. They apparently have never been exposed to it before and have little or no resistance against it as the Asian bees have. So for the time being, drugs seem to be the answer. The latest method is to feed the bees in the broodless state, with a miticide. The miticide apparently does not harm the bees, but when the mites suck the "blood" from the bees, the drug in the bees blood kills the mites. How successful it will be remains to be seen. The varroa reproduces very slowly so that if it can be killed off with a miticide like this, such control would be economically feasible. At least, we hope so, so we can be ready for it should it ever get into the U.S.

Who said beekeeping is a "dull business"? Even after 60 years as a beekeeper, I still feel that I know so little, and there is so much yet to learn. Now if I could only live another 60 years, perhaps I might learn twice as much as I do now. But I doubt it, as the old saying goes, "We are too soon old, and too late smart". The greatest problem with research is that it reveals more questions than it does answers, so that we know more and more about less and less. □

STRICTLY BACKLOT

(Continued from page 182)

backwards, my arms flailing the air. I knocked over the basket allowing the bees to take-off without me. As I lay there the bee-puppy came over and licked me on the nose.



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We returned home with the cardboard, basket stick and string, and a plain doughnut. The bee-puppy said he didn't like working for a living so he grew up to be a lawyer. And eventually I.....well, that's another story. Now you can see that if you don't loosen the rules of this contest some, I can't enter because I can't say I ac-

tually hived the swarm. That would make this simple event into a tall tale.

(So much for the **Second Annual How I Heroically Caught a Swarm Contest**. It's April, then May. Time for a new batch of tales. May your stories be tall and your swarms in low bushes!) □

GLEANINGS MAIL BOX

(Continued from page 192)

Dear Editor:

I would like to respond to the article by M. H. Yancey in the December, *Gleanings* issue titled "Let The Bees Tell You".

I live in western Washington where the weather is generally very damp and the honey flow is short at best. At worst, a good colony may make enough honey for its own winter needs. Although I have not kept bees for many years, there are a few things that are apparent that I have observed in dealing with them.

Langstroth didn't "invent" the bee space. Up until his time bees didn't care if a human provided them a hive with bee space or not. Bees invented the bee space and provide it wherever they need it by sealing off the areas they can't use as such and opening up areas they need for beeways. Langstroth merely discovered this and thus revolutionized beekeeping with his discovery. The size of the boxes he used to house his bees came about because he used the size material he had available to him at the time. I appreciate the idea of letting the bees tell you their needs or preferences in relationship to management, but it doesn't work that simply. The bees don't acknowledge the beekeeper as being necessary to their survival. As we know, bees will live almost anywhere whether it is convenient for the beekeeper or not. As it turned out, Langstroth provided us beekeepers with convenience.

Another great "invention" of the bees is called swarming. Swarming provides a necessary means for feral colonies to survive as a species. Since swarming is always more profitable for the colony than storing honey, under certain conditions a prolific colony will swarm any number of times necessary during a season. Swarming is NOT very profitable for the beekeeper. So we have tried to discover ways to discourage our colonies from doing so. The standard Langstroth hive is a very useful discovery. Once a swarm leaves the parent colony it is considerably weaker than the original organism. So it seems that this swarm would prefer a new home in a narrow hollow of a tree with only a chain saw slit or small knot hole for an entrance. Such a narrow cavity helps to maintain brood rearing temperature and a small entrance is very easy to defend. But what happens shortly after the swarm becomes well established? Another swarm strikes out for

another hollow tree. Nectar may be fairly plentiful and we now have three colonies where we originally had only one strong one.

The standard 10 frame hive managed by a profit-minded beekeeper provides the bees with the room they will eventually need to gather a supply of honey in excess of their own yearly needs. Keeping bees in hollow "gums" or anything less than the Langstroth system is only profitable for the bees. Unless they swarm, they will either be crowded out by brood where they would have to store honey for winter needs and thus starve to death or the brood nest would be so honeybound that the queen couldn't lay enough. This also results in the colony's death before winter ends. A good queen can just about fill a standard depth hive body but the bees will have swarmed long before she does.

Whether to use narrow ($\frac{3}{8}$) or wide ($\frac{7}{8}$ or larger) inch bottom board openings is very difficult to say. During a hot season the bees seem to appreciate more of an opening, because they don't cluster out as much during late afternoon. I have never seen solid burr comb built between the bottom board and the lower frame bars, but I have seen colonies die out from suffocation during winter when there was only $\frac{3}{8}$ inch bottom entrance and dead bees filled up the front to over an inch and the live bees couldn't clean them out. Also, I don't buy the idea of raising the top cover $\frac{3}{8}$ inch to provide the hive with upper ventilation. If there is a dearth of nectar or a drouth there will certainly take place another great bee "invention" robbing. It's no fun to see hundreds and hundreds of dead, dying and stinging bees gone mad. Instead, lay a couple of hive nails on the back of two corners between the super and the cover. If this small gap gets propolized shut, as it most probably will, then you will have another source in which to harvest propolis, but there will be little, if any, robbing. I use mouse screens and entrance reducers in the winter. They really are worth it because they work and the colony just doesn't need a $1\frac{3}{4}$ inch opening in the winter. The nails mentioned above provide enough opening for top ventilation in wintering as well.

Just thought you'd like to hear from western Washington.

Robert Shorthill
Devall, WA



Photo 1.

Photo 2.



Veteran Queen Producer

IN PHOTOGRAPH number one A.L. Webb, Sr. of Calvert, Alabama stands beside his great grandson, 4 years old, who was born on Mr. Webb's 76 birthday. At 82 years of age Mr. Webb figures to be one of, if not the oldest active queen breeder and shipper in the world. Calvert Apiaries, managed by Mr. Webb was organized in 1928.

In photograph number two Mrs. Webb stands beside her husband. They will have been married 60 years in June, 1981.

Shown in the photographs are a part of the queen yard of 5,000 nucs operated by Calvert Apiaries.

Collector's Corner

By DARL STOLLER
Latty, OH

THIS HAS BEEN a very interesting winter for us in our collecting of bee related items. We have found some nice things; have had some very nice letters written to us. This month we are writing this article about two very exciting, active collectors: Jim and Karen Steed from Richmond, Kentucky.

They have sent us a great deal of interesting material, along with some beautiful pictures of their collection. Jim and Karen are both doing graduate work at Eastern Kentucky University and the following information came from them:

...I started collecting honey pots, salt and pepper shakers, banks and things with bees or beehive motifs on them about a year ago. I collect toys that use the honeybee also. I now have about 3 small bookcases of these items. I sometimes wonder if it is not a sickness, but it gives me an excuse to get out and go to antique shows and shops, flea markets, and gift shops. I have ordered many items from advertisements in the beekeeping magazines. I have learned there are many beekeepers even here in Kentucky as well as elsewhere who collect these things. I have sold some duplicates to fellow beekeepers. To me, it is a kind of treasure hunt. I love to find something old, but this does not happen very often. I have enjoyed collecting and beekeeping both as a hobby. The fine people I have met through beekeeping have also been a pleasure to me.

Three items I like that are available to collectors now are: (1) a beautiful ceramic cookie jar shaped like a skep with bees on it made by Nancy Fore, Rt. 1, Box G-11, Jesup, GA for \$24.50 postpaid; (2) a stained glass honeybee by Professor Bill Householder, EKV, Richmond, KY 40475, for \$50.00. He has many interests, and I don't know if he will continue making them. (3) One of the most beautiful things I have is a wood inlay honeybee made by Ricky Jackson, c/o Rossman Apiaries, Moultrie, GA 31768, for \$140.00. This is an art form, but I can't remember the name for it. This item was on the cover of *Gleanings* last spring.

A recent addition to my collection is a set of china. The dinner plates have a picture of an old English cot-

Bee toys sold by I. H. Strauss with toy stores all over the U.S. Price is about \$42.00. You can see the queen, guard bees, drone with a mug and other figures.



Part of the Steed collection of items with bees on them. Photo by Steed.



tage with four skep beehives in the foreground. Under the picture is written "Ludington Warwickshire." On the back of the plates is written "Devon Ware, Fieldings, Stoke-on-Trent, Made in England, British Scenes," then a green number 2038. The hives are only on the dinner

plates. Needless to say, they were not cheap.

Toy bee puppets are sold by Betterbee, Inc., Box 37, Greenwich, NY 12874, and Brusby Mountain Bee Farm, RT 1, Moravin Falls, NC 28654.

A very nice print of beehives on a farm scene is entitled "Golden Days" by watercolorist Louis Archambault, signed by the artist for \$30.00 each. Louis Archambault, RT 4, Pine Grove, Missoula, Montana 59801.

Another bee motif item that is available now, and which I have, is a beautiful gold honeybee on a small stone pedestal. This is a copy of a sculpture in the Philadelphia Museum of Art. It was originally designed to be a hood ornament.

It is sold by the Museum Collections Company for \$43.75, P O Box 7000, Greenwich, CT 06830. (Item no. PH-152)

A beekeeping game that I have purchased for gifts is the Nectar Collector Game made and sold by the Animaltown Game Company, P O Box 2002, Santa Barbara, CA 93120, for about \$16.00 each. I think it is a great game that is all about beekeeping. This company sells other good games also. □



The glassware was made in Japan. The clock was made by Karen Steed from a Kit. It runs by battery. Photo by Steed.

Washington Hospitality — Washington Honey

By LEONORE M. BRAVO
San Francisco, CA

HAVING A particularly adverse reaction to cigarette smoke, I headed for an unoccupied table on the fringe of the banquet at the recent American Beekeepers Federation convention in Seattle. Non-smokers being in the majority in population, it's no trouble to fill a table with like minded people. One interesting side effect of this arrangement is to be seated with strangers, usually. Otherwise people tend to seat themselves in groups by place of origin. I like Binford Weaver's description of such strangers, made at the banquet as "friends I haven't met yet". Such was the case.

Sitting next to me on one side were Jim and Laurette Anderson of Bremerton, Washington. Until meeting them the only thing that I knew about Bremerton was that there was a Navy Yard there. Jim was full of information about beekeeping in that area including that he moves his hives out each year to sites on National Forest land around Mt. Ranier to make a crop of Fireweed honey. It has always been one of the treats of nature to me to come upon the tall beautiful lilac-purple spikes of fireweed when walking in the Sierra



Doris Mech's honey stand at Pike Market. Honey is from Mech Apiaries, Renton, Washington, Photo by Colby.

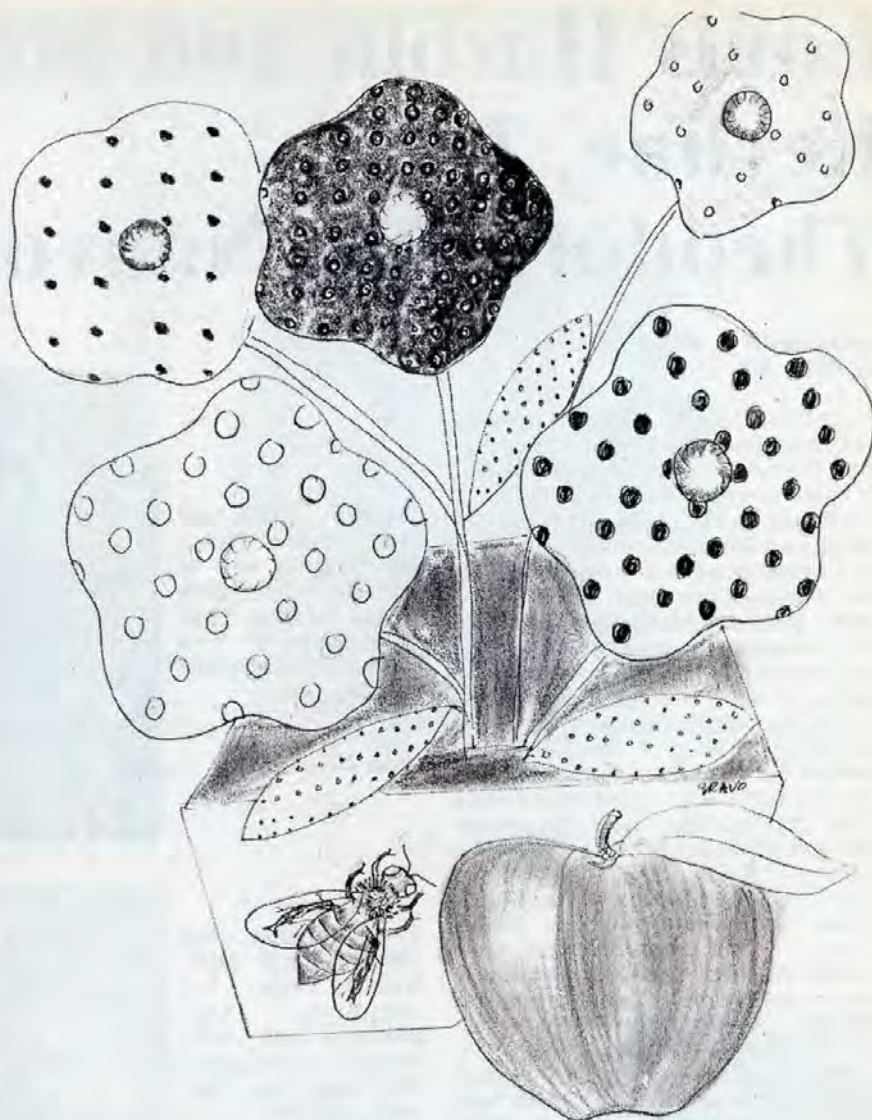
Nevadas. I'd never seen any bees on it however until last year where some was growing in an area of summer homes up toward Carson Pass. It struck me as a romantic way to make honey, from fireweed.

The host group, the Puget Sound Beekeepers' Assn. had provided honey bears filled with a very delicious distinctive tasting honey. The label, which was thoughtfully provided listed the floral sources: fireweed, alfalfa, clover, thistle and wildflowers from the 2400 ft. level in the upper Yakima Valley. Someone at the table commented that they could indeed taste the fireweed. I decided that the fireweed component is what arrested my attention as I had never tasted it before. After consuming most of the bottle on the delicious brown grainy rolls that were provided, someone laid claim to the remains. Meanwhile I spotted one that hadn't been used at the nearby speakers' table which my hosts gave me title to.

The banquet committee did a thoughtful job of selecting the menu which included two fresh vegetables and that wonderful local salmon. What a relief from chicken and peas! They also did an imaginative job of decorating the tables in a clime where fresh flowers are not readily available in January, making colorful flowers out of dotted cotton fabric which they stiffened.

My companion asked about Mt. St. Helens, what their experiences had been. We enjoyed the first-hand observations of Dan Mayer, I.P.M. Specialist, Irrigation Research Center, Prosser, Washington. One interesting thing that he had to say was that bees returning from the field where they had contacted the powdery ash from the Mt. St. Helens eruption would spin around on the landing board to get it off before entering the hive. Where the hive parts were tightly aligned the ash did not penetrate nor damage the honey, but where they weren't it filtered in through any and all cracks and damaged the crop.

He also asked about bears out in the mountains while making the fireweed honey crop. Jim Anderson, a great story teller was on the second good bear story, one in which the bear was simply clever and didn't cause wholesale damage, when the music which was just behind us began to play. That made conversation difficult and in any event we spent the rest of the evening dancing. Our hosts were still there when it ended and presented us with two honey bears filled with their own fireweed



Centerpieces from the American Beekeepers Federation banquet in Seattle. Flowers made of red dots on white, blue dots on white, white dots on red and orange, and brown dots on yellow cloth. Made by Erla Smith.

honey which they must have had in their car.

The tours offered were very distinctive and could have occurred only in Puget Sound. We went with the group to the Boeing plant and later on our own to Tillicum Village, enjoying the ride on the ferry and the fine salmon bake, Indian style.

Arriving at the wharf a little early we went exploring in the famous Pike St. market where we came upon a honey stand operated by very charming Doris Mech whose husband is a commercial beekeeper with over 200 hives. Her beautiful display included one pound and larger sizes of blackberry, maple, fireweed, and knapweed honey as well as pieces of chunk comb. I didn't take in all the details as my mind was on catching the ferry to Tillicum Village, but I did

notice and buy a copy of a most attractive book on cooking with honey which she wrote. The numerous bee cartoon illustrations by Dick Markle are humorous and distinctive and alone are worth buying the book for.

She had open jars of each kind of honey and toothpicks for sampling it. Whereas we take great pride in San Francisco in some honey that has a strong blackberry component, it was quite an experience to taste what must have been pure or almost pure blackberry honey! If there are any honey collectors out there, take note. It was the most wonderful honey that I have ever tasted. The maple had a very distinctive maple flavor. The fireweed was like that given to us by the Andersons and the knapweed

(Continued on page 220)

Louis Harbin and Sons Keyline, Inc. Theodore and Nauvoo, AL

By JOSEPH O. MOFFETT
Cushing, OK

LOUIS HARBIN BEGAN keeping bees commercially in 1946 after returning from Army Service in World War II. Now he and his three sons, Paul, Frederick, and Douglas, run 3,000 colonies and ship thousands of queens and package bees annually. Most of the colonies are kept either in extreme Southern Alabama near Mobile and around Jasper and Nauvoo in Northern Alabama. In previous years gallberry was the main source of surplus honey around Mobile. However, many of the gallberry bushes have been cut or burned, and now most of the surplus honey comes from the relatively new introduced Chinese tallow or popcorn tree, *Sapium sebiferum*. In 1977 the Harbins produced more than 40 barrels of honey from these Chinese tallow trees. In the mountainous area around Nauvoo, sourwood trees and sumac are the major honey producing plants.

The Harbins have a large wood-working shop on their 103 acres near Theodore, and they make all their own wooden goods from Cypress trees. They use a Kelley hive loader to move their bees. Their company was called Cottage Hill Apiaries before the Keyline name was adopted. They have suffered serious losses from insecticides applied to soybeans.

Louis Harbin has won many prizes exhibiting honey at the Alabama State Fair. He also has written articles about his business for *Gleanings in Bee Culture*, and the *American Bee Journal*.

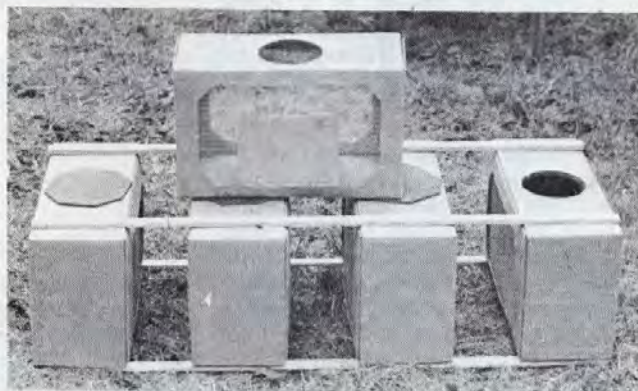
The Harbins have developed three unique pieces of equipment. One is a frame filler utilizing a sprinkler pipe to fill frames with sirup for feeding the bees. This frame filler is now being manufactured by Kelley, Honis and several other beekeepers had also copied and used this feeder.

The second unique idea is the cardboard Keyline Shipping Cage. The Harbins use it to ship their packages. They believe it has many advantages

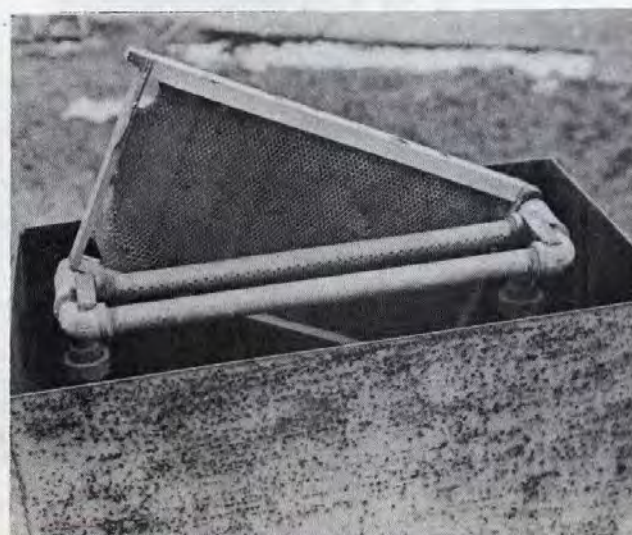
Douglas (left) and Paul Harbin are standing by one of the trucks belonging to the Harbins. They sell queens and packages under the Keyline name.



The Harbins use these Keyline cardboard cages for shipping their package bees. Louis Harbin developed this cage. The Harbins believe it is superior to the regular wooden cages normally used.



Frames can be filled with sugar syrup rapidly by inserting them between the two horizontal pipes in this frame filler. Syrup is sprayed out of the holes in the pipes by pressure from a pump. Three men can feed 400 colonies a day by using frames filled with syrup using this method.



Paul Harbin is demonstrating how to insert a frame into their frame filler. Walter T. Kelley is now manufacturing and selling this filler.

over the conventional wooden package.

The third is the use of measured metal containers to eliminate the need to weigh each package of bees. The Harbins deliver some of their packages to the north with their own trucks.

Louis Harbin obtained his first bees when he was eleven. Louis' father owned a grocery store, and a customer gave him eight colonies as payment for a grocery bill. Later, Louis obtained a B.S. in agricultural science from Auburn University. Upon the encouragement of Professor Guyton of Auburn University, Harbin decided to go into the queen and package business when he graduated. He obtained his start in the queen breeding from Fitzpatrick, Alabama.

The Harbin's have a daughter, Debrah, in addition to their three sons. Louis Harbin has been secretary-treasurer of the American Bee Breeders Association since 1968.

(In 1979 Louis Harbin's sons started their own bee business near Mobile, Alabama.)□

*Slightly modified from "Some Beekeepers and Associates, Part I", Moffett Publishing Co., Cushing, OK 74023.

The triangular metal-and-wire containers underneath the stand and inverted over the cardboard cage are used by the Harbins to fill their packages with bees. These containers are built to hold a given weight of bees. Therefore, the Harbins can use one of these devices to shake packages and not have to weigh the bees.

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JAMES J. DORAN

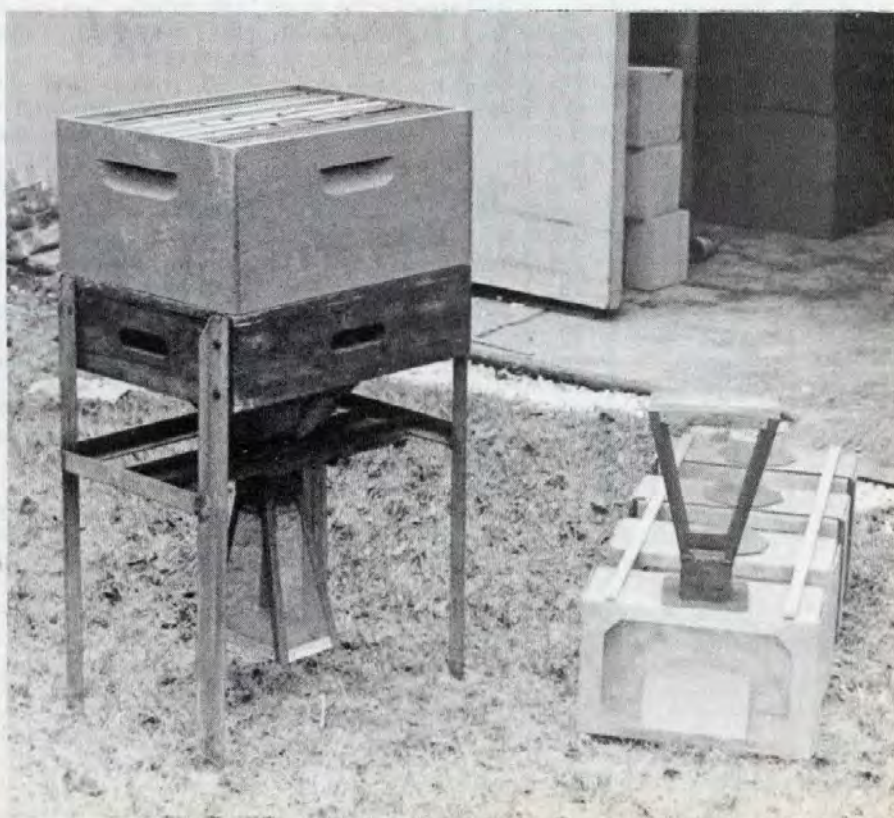
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Who's Who in Apiculture

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers, we have corrected our Who's Who in Apiculture as of March 1, 1980



State or Province	Bees on Combs Admitted	Apiary Registration Req.	Fee	Secretary State Association	Address
Ala.	Not Allowed	Yes	Yes	Mrs. R.V. Harrell, Hayneville 36040	
Alaska	None	No		Cook Inlet Beekeepers Assoc., P.O. Box 8-173, Anchorage 99508	
Alta.*	Not Allowed	Yes	No	Louise Finley, Box 8454, Stn F Edmonton T6J 1Y1	
Ariz.	Cer. & Per.	Yes	No	Clarence L. Benson, Box 858, Oracle 85623	
Ark.	Cer. & Per.	Yes	No	Joe M. Parkhill, Rt. 2, Box 190, Berryville 72616	
B.C.*	Not Allowed	Yes	No	A. King, 638-1701 Cedar Hill Cross Rd., Victoria V8P 2P9	
Calif.*	Certificate	Yes	No	Frank Johnson, 2114 Westminster Dr., Riverside 92506	
Colo.*	Cer. & Per.	Yes	Yes	Mrs. Genevieve Sherbenski, 11046 Isabelle Rd., Lafayette 80026	
Conn.*	Certificate	Yes	Yes	Fred Hartman, 46 Climax Rd., Simsbury 06070	
Del.*	Cer. & Per.	Yes	No	Wm. Eastburn, RT. 1, Box 843, Lincoln 19960	
Fla.*	Cer. & Per.	No	No	Ray Bailey, 1122 Lakeshore Blvd., Tavares, 32778	
Ga.*	Cer. & Per.	Yes	No	Cecil T. Sheppard, 3204 West Mart Lane, Doraville, 30340	
Hawaii*	Not Allowed	No	No	Lee Ong Chun, 2115 N. School St., Honolulu 96819	
Idaho*	Certificate	Yes	Yes	Golden Millet, Rt. 1 Box 8 Bee, Marsing 83639	
Ills.*	Cer. & Per.	Yes	No	Hoyt Taylor, Rt. 2, Pleasant Plains 62677	
Ind.*	Cer. & Per.	Yes	No	Claude F. Wade, Room 613, State Office Bldg., Indianapolis 46204	
Iowa*	Cer. & Per.	Yes	No	Glen L. Stanley, Agric. Dept., Wallace Bldg., Des Moines 50319	
Kans.*	Cer. & Per.	Opt.	Yes	Duane Levin, Box 5, Stuttgart 67670	
Ky.*	Cer. & Per.	Yes	Yes	Allen Holt, Rt. 2, Box 314, Frankfort 40601	
La.	Not Allowed	Yes	No	James Barnard, Breaux Bridge, La. 70517	
Man.*	Not Allowed	Yes	No	Don Dixon, 910 Norguay Bldg., Winnipeg R3C 0P8	
Me.*	Certificate	Yes	Yes	Philip W. Teague, Box 1621, Rockland 04841	
Md.*	Permit	Yes	No	John Romanik, 3200 Pine Orchard Lane, Ellicott City 21043	
Mass.*	Not Allowed	No	No	Milo R. Bacon, 8 Gradner Rd., Norwood 02062	
Mich.*	Not Allowed	Yes	No	Sharon Kussmaul, 12447 Mathews Hwy., Clinton 49236	
Minn.*	Cer. & Per.	Yes	Yes	Fred Holte, 2185 W. County Rd., B, Roseville 55113	
Miss.*	Cer. & Per.	No	No	Harry R. Fulton, P.O. Box 5207, State College 39762	
Mo*	Cer. & Per.	No	No	Marilyn Kay Smith, 4301 Walnut Tree, St. Charles 63301	
Mont.*	Cer. & Per.	Yes	Yes	JoAnne Speelman, 210 Harmony Rd., Kalispell 59901	
Nebr.*	Cer. & Per.	Yes	No	Jim Olingue, Loop City 68853	
Nev.	Permit	Yes	Yes	Mrs. Alma Nygren, 1225 Lovelock Hwy., Fallon 89406	
N.B.*	Not Allowed	Yes	No	Mrs. Eva G. Logan, Box 9, Stanley E0H 1T0	
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N.J.*	Certificate	No		Mrs. Elizabeth Rodrigues, 157 5 Point Rd., Colts Neck 07722	
N.M.	Certificate	Yes	Yes	Mrs. Alice Stubben, 6621 Arno N.E., Albuquerque 87107	
N.Y.*	Certificate	Yes	No	Jon MacDonald, Paris Hill Road, Sauquoit 13456	
N.C.*	Cer. & Per.	No	No	James H. Bryant, Jr., 1208 Briar Cliff Rd., Burlington, 27215	
N.D.	Cer. & Per.	Yes	Yes	Dewey Robson, 338 Joal Dr., Carrington 58421	
N.S.*	Not Allowed	Yes	No	Earl Blades, P.O. Box 550, Truro B2N 5E3	
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Ont.*	Permit	Yes	No	P. W. Burke, Dept. of Env. Biology, Graham Hall, Univ. of Guelph N1G 2W1	
Oreg.*	Certificate	Yes	Yes	Diana & John Van Dresche, Rt 1, Box 162 Jefferson 97352	
Pa.*	Cer. & Per.	No	No	Mrs. Glenn Crimbring, R. D. 1, Canton 17724	
P.E.I.*	Not Allowed	No	No	Dan McAskill, P.O. Box 1114, Charlottetown C1A 7M8	
P. Rico	Not Allowed	No	No	No Association	
Que.*	Not Allowed	No	No	L. Dion, C.P., 656 St. Hyacinthe, Que.	
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Sask.*	Not Allowed	No	No	John Gruszka, 196 9th St. E., Prince Albert S6V 0X5	
S.C.	Certificate	No	No	Robert Cutler, 100 Shelton Drive, Spartanburg 29302	
S.D.*	Certificate	Yes	Yes	Gary Schmidt, Star Rt. 2, Box 6, Martin 57551	
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Wisc.*	Cer. & Per.	No	No	Charles Kopf, Rt. 2, Box 225, Loganville 54943	
Wyo.*	Certificate	Yes	No	Mrs. Robert Bryant, 901 Obie Sue, Worland 82401	

*Publish a newsletter sent to State Association Members

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Alaska	Wayne Vondre, Anchorage		None
Alta.			Don MacDonald, Falher T0H 1M0
Ariz.	Dr. Norbert Kauffeld, Tucson		R. W. Hancock, Phoenix 85005
Ark.			Donald E. Bailey, Little Rock 72205
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Me.			Paul Szott, Turner 04282
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Mich.	Dr. Roger Hoopingarner, E. Lansing		
Minn.	Dr. Basil Furgala, St. Paul	David Noetzel, St. Paul	Richard A. Hyser, St. Paul 55107
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W.Va.			Earl Cochran, Charleston 25305
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UNITED STATES MARKETING AID — U. S. Dept. of Agriculture, Washington, D. C. **MARKET DEVELOPMENT PROGRAMS**, Specialty Crops Branch, Fruit and

Vegetable Division, Agricultural Marketing Service, USDA, Washington, D. C. 20250, James S. Miller. **HONEY MARKET NEWS**, Market Reports Section, Fruit and Vegetable Division, Market News Branch, 2503 South Building, Washington, D. C. 20250. **PRICE SUPPORT PROGRAM**, Production Adjustment Division Agricultural Stabilization and Conservation Service, USDA, Washington, D. C. 20013, Harry Sullivan.

EXTENSION — SEA (Federal) Paul W. Bergman, Pesticide: Use & Impact Assessment, USDA, Washington, D. C. 20250.

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NOTE: Where we did not hear from a state or organization we repeated last year's listing.

INTERNATIONAL ORGANIZATIONS

INTERNATIONAL BEE RESEARCH ASSN. — Hill House, Chalfont St. Peter, Gerrards Cross, Buckinghamshire, England SL0 0NR. (Write for our catalogues of Publications on beekeeping and allied subjects.)

APIMONDIA — Italy, Rome Corso Vittorio Emanuele 101.

Questions and Answers

Q. Some of the honey I have crystallized (this years' honey) very fast. I sold a plastic bear to a friend of mine. When it crystallized, instead of putting in hot water as I had instructed him to do, to bring it back to syrup again, he put it in the microwave for twenty seconds. He said it returned to liquid. He said it did not affect the flavor. Is this good or bad? E.H. Pennsylvania

A. We were very interested in your comments about the customer putting the plastic bear of honey in the microwave oven. This is something with which I have had no experience so perhaps this can be tried on a small scale for testing. In the instance of the plastic container it may be better than placing in hot water where there is the possibility of damaging the container if the water is too hot.

The advantage of using the hot water method is that there is less likelihood of overheating the honey. Since domestic microwave ovens activate the water molecules in the honey the moisture content of the honey might be a factor in how well this method would work.

Q. Do you have information on using the insect *Trichogramma* for the control of moths in or around the bee hive? T.L. California

A. The *Trichogrammatids*, which are minute insects with larvae which are parasites of insect eggs, have some value in controlling insect pests. I have not, however, heard of any tests using the larvae of this family of Chalcids for predatory experiments on the wax moth.

Q. This winter, on warm days, I have noticed bees in my father's chicken feed (laying feed). I noticed they were gathering something and carrying it back to their hives. I checked the ingredients and figure since it consists of meat and bone meal, fish meal, and soy bean meal, these items were what they were gathering for a pollen substitute. They were really gathering it, as if was sugar water.

What affect would this have on the

bees? Do any pollen substitutes have these ingredients? D.S. Kentucky

A. I note, from the list of the ingredients, that there are some which are undoubtedly attractive to the bees. This type of material is especially attractive to bees very early in the spring before natural sources of pollen are available from trees and other plants. The bees are probably attracted to the feed due to the pulverized form and to the protein content. Bees are also attracted to bird feeders before natural pollen is available, gathering the finely ground material that is left as residue from the bird feed. Using these ingredients should have no harmful affect on the bees. Quite to the contrary, it may be beneficial since pollen substitutes contain ingredients that provide essentially the same nutrients as are in the chicken feed mix, but which of course are formulated for chickens and not honeybees.

Q. We have a wonderful bunch of people in our club and it is a good club because a lot of people worked hard to make it so long before I moved to Memphis (Wall, MS). We have our own honey house and other assets. But we have a lot of stubborn people in our club and I probably am at the top of the list. The question is, should you ventilate your hive in the summer? A few people feel strongly that it should not be vented. I have never seen this in *Gleanings*. --I said I would write all the major universities in the United States and get their opinion but the no-vent-summer people say that people who live in California, Ohio, Florida or any place other than the Memphis area don't know what our situation is like here. I studied under Dr. John Ambrose and as I remember, he says vent in the summer. I will admit that if Dr. Ambrose said hang my hive in the trees, that's where they would go. T.D. Tennessee

A. I am sure this is one of those questions that will never receive a definitive answer from anyone. This is due particularly to the fact, as you have stated, that conditions vary throughout the country. I note that in California (where the temperatures range high) they use a $\frac{3}{8}$ " deep opening practically year around. Whereas, in some of the northern states where

the temperature (even in the summer) seldom reaches 90°, they use openings beyond the normal $\frac{7}{8}$ " depth. It appears to be a case of judgement on the part of beekeepers; whether this judgement is correct is anyone's guess.

It has been the experience of most beekeepers that a reasonably strong colony of bees can maintain nearly all hive activities despite hot weather, but an unusual expenditure of energy may be required to gather water and in fanning to relieve this stress. The beekeeper can help bees lower hive temperatures by providing partial shade, a nearby water source and extra hive ventilation. Hive ventilation may be provided by openings made by sliding the food chamber forward on the brood chamber, allowing a fraction of an inch crack, propping up the cover slightly or by offsetting or staggering the supers slightly. Opinions differ as to whether ventilation above the brood chamber is desirable when nectar is being gathered and honey stored. Providing extra clustering space below the brood chamber may be the most effective means of aiding heat stress. This can be in the form of an extra deep bottom boards or by placing a slatted rack or shallow super below the brood chamber.

Q. I have heard of a queen being "honey bound" but in my experience this will be corrected by the colony, given a good queen and sufficient time. I have a real problem with hives being pollen-bound. In this locality we have a year around abundance of pollen and the bees are unable to relocate pollen supplies to make room for the brood, as they do with honey. J.J. Louisiana

A. We have heard that such conditions exist but I doubt if there is ever too much pollen stored in the hive for the use of the bees; it appears to be a problem of storage of the excess so as not to interfere with the storage of honey, which is of primary interest to the beekeeper. Pollen stored in cells for some time becomes very difficult to remove by the bees and the beekeeper. The only recourse is to remove the pollen filled combs and replace them with empty combs.

(Continued on page 219)

Beekeeping Technology

By DR. JAMES E. TEW*
Wooster, OHIO

SINGLE PLY medium brood, Special 7-11, 3-ply medium brood, ripple wired foundation (with or without hooks), Duragilt — the list goes on and on. One of the fundamental components of a hive, foundation, can be one of the more difficult to intelligently purchase, especially if one is studying several catalogs attempting to make the best buy.

In past years when foundation question were simpler, a beekeeper was offered heavy brood, medium brood, or thin brood foundation. Thin and extra thin surplus grades were foundations to be used in section honey supers or in other honey surplus storage areas. Of the three brood choices, medium brood is still commonly available. Heavy brood is available from at least one producer if the beekeeper supplies the wax. As early as 1907 some major producers of foundation were suggesting foundation be wired to give support to the foundation while bees were constructing comb and to improve strength after comb completion. Consequently crimp-wired (or ripple wired) foundation has been popular for many years.

Early sheets of foundation were made by pouring molten beeswax over flat plates that had a worker cell pattern. Before the wax cooled another template was pressed onto the top of the wax, resulting in a rather crude sheet of foundation. Wires could be inserted into the sheet during the process which was considered an advantage. However, foundation rolls that were introduced about the same time were faster and yielded a better product. Unstamped sheets of foundation were forced between two rollers which pressed the imprint of wax cells into the sheet.

Foundation produced by either of these techniques was referred to as single ply since only one thickness of wax was used to produce the final product. Often the weight of bees on foundation or warm weather would cause foundation to sag resulting in distorted cells in the completed comb. To help combat this condition, foundation consisting of 3 plies molded together became (and is still) available. The inner ply is processed to be stiffer and help resist sag.

FOUNDATION AND FRAMES — A VARIETY OF COMBINATIONS

Another re-inforced foundation that has been available for several years is formulated by spraying beeswax onto sheets of plastic. The wax coated plastic sheet is then embossed on a foundation mill. If there are no metal edges clamped onto the ends of the sheet, the foundation is called "Duracomb". If metal edges are on the sheet, the foundation is called Duragilt. The advantages to foundation made by this technique are quick installation and no support wiring. Support pins may be needed on "Duracomb".

In summary, the types of beeswax foundation commonly available today are single ply medium brood, 3-ply re-inforced, wired foundation, and plastic center foundation. Any one of these foundations may be used in the brood area or in extracting supers.

Specially processed sheets of foundation (produced from cappings wax) are used in cut comb or comb honey supers. Foundation with this purpose is referred to as thin super foundation, thin surplus foundation, or cut comb honey foundation. One supplier manufactures a product called 7-11 cut comb foundation. The cell size embossed on the sheet is midway between worker and a drone cell. Consequently, queens are reluctant to deposit eggs in such cells.

In as far as foundation is concerned, the beekeeper must decide what type foundation to go into brood frames, extracting frames, and comb honey frames. A decision that must be made concomitantly is what type frame to purchase to be compatible with foundation.

For all practical purposes, end bars don't vary. The major concern lies with top bars and bottom bars. Essentially all top bars are either grooved or have a wedge cut out. (Some comb honey frames may have the groove cut all the way through to the bar — slotted top bars) Obviously grooved top bars could not have foundation with hooks easily installed since such hooks could not effectively be forced into the top bar groove. For this type top bar the beekeeper should use one of the plastic center foundations or crimp wired foundation without hooks. Wedge top bars will take any type foundation.

However foundations with wire hooks are best suited for this top bar.

Bottom bars offer the same variation as top bars with the addition of a solid bottom bar. Either type top bar (grooved or wedged) having a solid bottom bar requires foundation cut slightly shorter than frames having 2-pieced (i.e. slotted) or grooved bottom bars.

Usually grooved top bars are used with grooved bottom bars. If the sheet of foundation does not have hooks or has a plastic center, it may be placed in the frame at the time of frame assembly, thus initially saving time and labor. Each type of top bar and bottom bar has advantages and disadvantages the beekeeper must consider. If possible, the same combination should be used throughout the operation. If combs are ever damaged, repair is made simpler by having frames standardized.

Other types of specialty foundation or "new idea" products are available. In areas that routinely produce low viscous honey crops or beekeepers desire large drone populations, drone cell foundation is available. Honey is more easily extracted from such combs.

Colored foundation used to make candles is quite common. Occasionally, materials other than beeswax are used in its production. Therefore, it is not particularly good for comb construction.

State and federal agencies have researched plastic foundation or plastic combs with varying degrees of success. Currently several manufacturers are offering rigid plastic foundation.

Essentially, the frame/foundation question is not particularly complicated. One should know the generalized terms for frame parts and foundation and make selections that are compatible. For a greater appreciation of foundation in a frame — just observe a crosscomb colony the next opportunity you have. □

(Continued on page 219)

Breeding Of Honeybee Under The Microscope

By ABRAHAM EYTAN
Israel

THAT WAS THE title of a front-page leading article in Norway's most popular newspaper last July. The article, accompanied by two large photographs, reports on a training course in queen bee insemination, given by Shoshana and Dr. A Eytan from Israel, guests of the Norwegian Beekeepers Association. Experts from Israel were invited for this purpose, an endeavor in which other specialists had failed. As written in the Book of Isaiah: "For out of Zion shall go forth the teaching."

Norway has one central beekeepers association, as opposed to several such competing organizations in the other Scandinavian countries. The Association celebrated its 75th anniversary last year. Norway has about 60,000 colonies of bees, owned by 4,500 beekeepers, but only a small number of these apiaries are commercially profitable and constitute the sole income of the owner. The reason is the short season in Norway's northern climate, which lasts only 4 months. Despite such a short season, the average yield, on a multi-annual basis, is surprisingly high — 18 kg per hive, as compared to 7 kg in Switzerland. By employing a migratory system colony may yield as much as 50 to 80 kilos (100-160 lbs.) in a good year. The bee pastures of Norway are rich, and that accounts for such high honey crops. There are four main sources of honey: 1/ Heather (*Calluna vulgaris*) which covers large areas of the southern and central hills and rocky mountains. The honey from this plant is of a jelly-like consistency and can be extracted only by means of needle-like appliances, of the comb's size, outfitted with long stainless steel needles, 2/ Raspberry (*Rubus*), 3/ Honeydew, which is the sweet excretion of aphids; and 4/ Rape (*Brassica napus*) a species of oil-plant, common in Scandinavia as well as in Germany.

That Wonderful Organization

The soul and guiding spirit of Norway's beekeepers is Mr. Rosenberg, the Secretary General of the Association, sixty five years old. He founded and built the central breeding station of Norway after World War Two. The station is situated 16 km from Oslo. It sells 1200 queen-bees during the short four-month Norwegian bee

Mr. Odd Rosenberg
at a winter packed
hive.



season. The price of a queen bee is about \$30, including 20% taxes. Mr Rosenberg lives on the premises of the station, which also houses the offices of the Association and the editorial offices of the Bee Journal. The journal is of high professional quality and has a circulation of 5,000 copies. The editor is Mr. Rosenberg.

The Norwegian Beekeepers' Association boasts a relatively high budget. The balance sheet for 1979 was published last June in the journal of the Association. The budget includes the breeding station, the journal, a bee museum and various funds, and adds up to the very respectable sum of \$200,000. (For a realistic evaluation I should mention that the price of a loaf of bread is about 85c.

The budget is financed by membership fees, contributions from the honey center, private donations, and a small sum of government aid.

Members of the Association pay a yearly membership fee of about \$10, irrespective of the number of hives they own. The monthly magazine is financed by the "Honey Center" and is supplied to members free of charge.

A Wealthy Country

Norway is a rich country. It has a population of four million, spread out over a territory 10 times the size of Israel (Israel's population is three million). The North Sea shores of Norway have oil and natural gas reserves which can compete with those of the Persian Gulf.

The government provides an all inclusive social and health insurance which is so efficient that it actually pays to be on sick leave. A joke is going around in Norway, which is particularly appropriate for the situation: When the director of a factory is be-

ing asked by a guest how many people are working for him, his answer is "half of them are working". It is nearly impossible to find domestic help, and the pay is exorbitant. Three non-specialized guest workers from Poland at the breeding station receive a salary of about \$1000 per month each, and free lodging (housing).

Norway has four universities, but only Oslo, the capital, has a Faculty of Agriculture. Students wishing to study the honeybee attend the Institute of Beekeeping, headed by Dr. Villumstad. The Institute is situated in a small village, not far from Oslo, on picturesque grounds. Some of our students at the training course came from this Institute.

Controversy on the question of bee races.

Some years ago a serious dispute broke out between Prof. Lunder, Director of the Faculty, who has retired since then, and members of the Beekeeper's Association. Prof. Lunder was in favor of the Carniolan bee which develops more rapidly in the spring, is of a mild disposition, economical and more resistant to chalk-brood, the most common brood disease among Norway's bees. Members of the Association argued

that the nordic black race, *Apis mellifica mellifica*, is better adapted to the climate and conditions of Norway, and mainly, that it is a better honey gatherer. In the meantime the Carniolan bee was imported in large numbers and even some Italian bees for cross breeding. Today the local black bee is prevalent and import of bees from other countries is strictly prohibited.

So far there is no Varroa disease in Norway; the foul-brood is rare and chalk-brood and Nosema are widely spread.

Until recently the breeding station transported the virgin queens to the mating stations. The upkeep of such stations is very expensive mainly because of the high cost of transportation. One such breeding station is situated on an island in the middle of the Oslo-fjord. I found the island a charming place but in spite of its isolation I saw many yellow bees among the black ones. Today the official policy is to go over to artificial insemination, which is sure, effective and economical.

Israelite among the blond giants

During our four-week stay in Norway we trained 25 students from all over the country in artificial insemina-

tion. We also had some participants from Sweden. The students were divided into small groups and each instruction course lasted 3 days. I would like to quote a few lines from the letter of thanks we received after completion of our task: "Mrs. Eytan has shown us her masterly ability in this profession and she has also been an excellent teacher. We are full of gratitude to Mrs. and Dr. Eytan for their excellent guiding which will be very valuable for the development of the Norwegian beekeeping."

The Honey Center

The beekeepers of Norway have to deliver their honey to the only official marketing agent, which is the Honey Center in Oslo. They are allowed to keep 25% percent of the yield for private sale. Import of honey is forbidden, except by the Honey Center. The Center pay \$5 per kilo for honey to the beekeepers; after treatment and packing at the Center the honey sells for \$9, which leaves the Center with a handsome profit. The average yearly yield is about 700 tons and consumption reaches 1000 tons. The Center imports the missing quantity, which adds a lot to its profits. Before marketing the honey is processed to a thick creamy consistence. The Norwegian people like and consume **only** crystallized creamy honey.

The new building of the Honey Center was built two years ago. The Center is self-supporting and large sums were invested in the new building. The director proudly told us that the Honey Center is the most up-to-date building of its kind in Europe. The Norwegian Honey Center is more modern and with a better outlook for the future than the center in Monfavet, France, although I should add that I visited there over 12 years ago and things may have changed since then.

The Honey Center includes a large store containing every imaginable item of beekeeping equipment, from grafting needles to huge honey extractors. On a special shelf one can find all the professional literature on beekeeping in the Norwegian language. I was particularly impressed by a small booklet containing the laws and regulations of beekeeping in Norway. It even contains detailed rules on migration, catching or swarms, the prohibition of use of synthetic wax for producing comb foundation, and much more.

The hives in Norway have standard measurements which is very efficient and helpful and prevents unnecessary confusion, as is the case in other European countries. The Honey Center buys all equipment directly

(Continued on page 217)



Dr. Abraham Eytan standing and Mrs. Shoshana Eytan at the microscope with one of her pupils.

The Southern States Beekeepers' Federation Rises Again

By JOHN T. AMBROSE,
Secretary-Treasurer,
Southern States Beekeepers' Federation

THE SOUTHERN States Beekeepers' Federation (SSBF) is the oldest, continuously active, regional beekeeping organization in the United States. The SSBF is an unusual organization in that it has no constitution or by-laws and it charges its members no dues. Individual membership in the SSBF is granted to anyone who is a member of a state beekeeping association within the geographic area of the SSBF. Unfortunately, participation in the Southern States Beekeepers' Federation has declined in recent years and so a concerted effort is now being made to revitalize this important organization.

Because it is important to have a group which is concerned with the special problems of the southern beekeeper, the SSBF will be revitalized to serve as a focal point for southern beekeepers' problems and possible solutions. This will be accomplished through several steps: (1) the Southern States Beekeepers' Federation will be officially incorporated so that it will have a legal existence when it speaks out on behalf of the beekeepers, (2) representatives from the southern states and the 1980-81 elected officers of the SSBF will adopt a constitution and by-laws for the SSBF so that its activities will become more formalized and more

easily understood by interested beekeepers, (3) the tradition of not charging individual dues to SSBF members will be maintained, (4) fundraising projects such as the one discussed in this article will be used to finance the activities and programs of the SSBF, and (5) the SSBF will undertake an active and continuing role to promote beekeeping and educate the general public as to the importance of beekeeping and the problems that confront the beekeeper. A major portion of this goal to educate the public will be conducted by preparing news releases on such beekeeping problems as pesticide misuse and distributing

Figure 1: "Beeyard", black and white print of the painting by Ward Nichols.



that information to radio and TV stations throughout the southern states and other areas, as requested.

As a first step in financing the expanded and important activities for beekeepers, the SSBF has commissioned Ward Nichols, one of the most renowned realist painters in the southwest, to prepare a beekeeping painting (see Figure 1). A limited quantity (2,000) of prints are being made of this painting and the numbered and signed-by-the-artist prints will be made available to beekeepers and the general public. Additional information on these beautiful prints and background information on the SSBF are provided in this article.

HISTORY OF THE SOUTHERN STATES BEEKEEPERS' FEDERATION: The SSBF was formed in January 1928 when representatives from five southern states decided that such an organization was necessary to serve the beekeeping needs of the South. At that time the organization was named the Southern Beekeeping States Federation. The founding states of the organization were Arkansas, Louisiana, Missouri, Oklahoma, and Texas. The first activity of this group was to send a resolution to the U S Department of Agriculture which protested the use of unlabelled corn syrup in food and which also requested that a field station for beekeeping research be established in the South.

Largely through the efforts of the SSBF the U S Dept of Agriculture did establish a honeybee research laboratory in Baton Rouge, LA and today all food products must list their ingredients on the label. This last change can not be entirely credited to the SSBF but their efforts did play a role in today's food labelling requirements. Over the years the SSBF grew and some changes did occur. In 1939 at their annual meeting in Vicksburg the name of the organization was officially changed to the Southern States Beekeepers' Federation. Today the accepted geographic area of the SSBF includes the 17 states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

CURRENT STATUS OF THE SOUTHERN STATES BEEKEEPERS' FEDERATION: It has been the practice of the SSBF to hold its annual meetings each year in conjunction with one of its member states, which

would serve as host for the meeting. This year's meeting will be held with the N.C. State Beekeepers Association's meetings on July 16-18, 1981 at Appalachian State University in Boone, N.C. This is an open meeting and all beekeepers are invited.

The current officers of the SSBF (elected at the 1980 meeting in South Carolina are) President — Steve Forrest (NC), Vice President — Rick Fell (VA), Recording Secretary — Ralph Wadlow (FL) and Secretary Treasurer — John Ambrose (NC). These officers in conjunction with representatives from all of the interested member states of the SSBF are in the process of incorporating the organization and adopting a constitution and by-laws. These individuals will also be responsible for organizing the initial fund raising projects for the SSBF so that the organization can maintain its tradition of not charging individual dues but at the same time the organization must have enough operating funds to effectively serve the beekeepers.

FUND RAISING PROJECT: The goals of the SSBF are to promote beekeeping and to educate the general public as to the importance of beekeeping and the problems that confront beekeepers. As described earlier in this article, one method of accomplishing these goals will be to distribute public service announcements to radio and TV stations on such topics as pesticide misuse and the disastrous effects it can have on honeybees. Such activities cost money and the SSBF will finance these efforts through various fund raising projects. The first fund raising effort is the production of a beekeeping painting by Ward Nichols, an eminent southern painter. This painting entitled "Beeyard" (see Figure 1) is now completed and a limited number of true-color prints have been produced for sale. The original painting sold for \$5,000.00 and these prints are certain to become collectors' items as have the previous works of this excellent artist.

THE ARTIST: Ward Nichols is one of the most renowned realist painters in the Southeast. He has been described as an artist with a rare versatility and the intense personal insight that transforms the commonplace into a visual world of his own creation. Mr. Nichols has had 67 one-man shows, has been represented in 26 national and inter-

national art exhibits and is listed in such publications as "Who's Who in American Art" and "Personalities of the South". He is an extremely talented individual who has created a masterpiece in his painting "Beeyard" which the SSBF is making available in print form to beekeepers everywhere.

THE PAINTING: Ward Nichols has created a beekeeping masterpiece entitled "Beeyard" exclusively for the use of the SSBF. The SSBF has subsequently commissioned the production of true color prints from this painting. The prints will be each individually examined by the artist, Mr. Nichols, and he will sign and number no more than 2,000 of the prints for sale by the SSBF. Figure 1 in this article is in black and white and is included only to depict the subject matter of the painting and it can in no way acquaint you with the beautiful depth of color that the signed prints possess. The prints measure 21 by 26 inches which includes a 2 inch border around the print to allow for framing.

The average person would recognize that this painting, "Beeyard" is a beekeeping painting, but only the individual who has been involved in this ancient art would recognize the diversity of beekeeping hives ranging from the log gums to the plank hives to the modern Langstroth hives. This beekeeping scene depicts the progression of the American Beekeepers' Association with the most beneficial of all insects, the honeybee. In addition, the artist's depiction of stored equipment under the shed and the use of sourwood trees for the bee gums adds a touch of authenticity that any beekeeper can appreciate.

The cost of a print is \$75.00 which includes shipment and handling charges on all orders received by July 31, 1981. The print will be mailed insured by UPS and will include directions for framing, information on the original painting and background material on the artist. All profits will go to the Southern States Beekeepers' Federation. □

If you are interested in purchasing one of these prints write to:
Southern States Beekeepers' Fed.
1403 Buckingham Road
Garner, NC 27529

Let's Go For A Bee Walk

By ELSIE EVELSIZER
Forrest, IL

SEVERAL YEARS AGO I was fortunate to obtain through inter-library loan a charming but practical bee book entitled *Bee Walk*. It was written years ago by a lady beekeeper in Britain, Mrs. Lisney. The English do this type of book so very well, whether the topic be beekeeping or gardening or orcharding or small livestock. They bring a great deal of enthusiasm and high standards to their amateur endeavors.

I found myself greatly attracted to a picture of Mrs. Lisney tending her bees in British peak-roofed hives arranged in a long line beside a garden path, and completely surrounded by the lush growth of herbs, flowers and shrubs. The hives and beekeeper were protected from harsh winds by a tall dense hedge in the background. This was Mrs. Lisney's "Bee Walk". I vowed then and there to have a bee walk for myself one day where I could casually stroll for relaxation and watch my bees gorge themselves on pollen and nectar.

Here in east central Illinois the bees begin exploring for pollen and then nectar as soon as the weather permits them to fly and nature has awakened the first of the spring plants. In the spring of 1980 the bees were working the old silver maples in our front yard and a few crocus during the first week of April, followed ten days later by the pollen of the pussy willow south of the big barn. By the end of April and into the first week of May the bees were busy in the apricot and sweet cherry trees along the road. The dwarf apples, pears, peaches and plums bloomed in the orchard and the late apple blooms lasted until mid-May according to my two sons' 4-H records. The first lowly dandelion appeared on April 3 and soon the orchard and barnyard were awash with them. No lawn beautifying pesticide ever threatens them and they produce a healthy stand year after year. As I walk back and forth between the various gardens in April and May I like to watch the bees stuffing their pantaloons-like pollen baskets from the yellow dandelions. So thick are the bees here that it takes but a moment to find one at work and is a good respite from my task of setting out cabbage or tomato plants during a sunny forenoon in the garden.

As the dandelions go to seed and float away in late May the bees turn their attention to the little white Dutch clover which produces a lot of nectar if the soil contains an adequate supply of moisture. If June turns off hot and dry the Dutch clover blossoms die and the plants wither and the bees are forced to look elsewhere or sadly to do without if the beekeeper isn't watching the supply of stores.

This year the Illinois Department of Transportation in an attempt to save on fuel, decided to not mow the wide grass strips along some of our state highways. In addition to saving our tax money this practice was a great boon to conservation and to our bees. A quarter-mile north of us several years ago a new stretch of highway had its roadside and ditchbanks planted to sweet clover to hold the soil against slumping and run-off.

.....
"The answer to that is — pure pleasure, both mine and the bees."
.....

Other years this area was carefully mowed by the highway crews. This year the clover was left standing and the succession of varieties, both white and yellow, bloomed from early June into September in spite of a very hot dry summer. All day long our bees would skim low over the goat barn roof on their way to the hives in the orchard as they brought in the clover nectar and gave us our best crop of honey ever. In July this was supplemented with nectar from nearby fields of soybeans. Fall flows for us have never amounted to very much but this year in early October we extracted several hundred pounds of what we describe to our customers as fall flower honey, a slightly darker and stronger-flavored honey than the milder clover-soybean honey of mid-summer.

We had a delightful experience in extracting some of our honey towards the end of August. We took off a super of very light amber honey with a delicious mild sweet clover flavor, but as you rolled this honey back on your tongue, another flavor insinuated itself with a mint-like bite. If any of

the other hives gathered this particular nectar it was blended in with the other honey and didn't show up as a distinct flavor when extracted. No other hive produced an entire super of this particular hue and flavor. We would like to know just what special plant the bees found. Alfalfa? Horse-mint? This honey was bottled separately and carefully marked for use as gifts and on special occasions.

This sequence of nectar and pollen producing plants is the business end of our beekeeping and has proved to be dependable over the years. Some years we get more honey as in 1980, and some years we get less, but barring totally disastrous weather, we do get a crop.

Why, you might as well ask, with all this abundance of bee pasture, would I want to bother with a bee walk? The answer to that is — pure pleasure, both mine and the bees'.

Our bees are a sideline business and we welcome the extra income generated by our honey sales. We read the current literature and try to stay informed as to improved methods and practices. We take our beekeeping seriously, but I also love my bees and want to enjoy them just for themselves. Hence a bee walk. I like that picture of Richard Taylor in *The Joys of Beekeeping* contemplating his bees from a chair drawn near the hive but I prefer to contemplate my bees while strolling and to enjoy their joy in the herbs and flowers that I have provided for both of us.

I am well aware that any amount of planting I may do will probably not be reflected in my pocketbook but Dr. Elbert Jaycox in his Horticultural Facts extension bulletin "Managing Honeybees for Pollination" (B-7-79 Cooperative Extension Service, University of Illinois at Urbana-Champaign, College of Agriculture) suggests that after making new colonies in the summer, you move the colonies to a new location at least two miles from their original apiary and preferably within a mile of the residential areas of towns or cities where the blooming trees and shrubs will provide good sources of pollen to build up the colonies. So, in large

quantities covering many acres, domestic plantings have a real contribution to make. On a smaller scale near your own homestead, they can help fill in the gaps between major nectar flows and keep the bees occupied with pollinating your fruits, vegetables, flowers and herbs as they eagerly "tend to their business".

Here at Winterthur Farm I enjoy planting things and watching them grow. The winter months are a good time to read books about gardening, tree fruit and small fruit culture, herbs and flowers, and of course books on the art of keeping bees. The past two winters have found me deeply engrossed in old and new herb books and from these studies I have gradually begun my bee walk.

Old English gardens actually contained more herbs than vegetables as many of our familiar vegetables were unknown or unavailable to them. Herbs were indispensable to the English housewife as medicine, as enhancing or masking the flavor of foods, as fragrances, and for ornament. They were also very important in some religious rites and in the practice of white witchcraft. Most of these old gardens also included bee skeps as almost every country dweller was a beekeeper. This was true to a lesser extent in the history of our own country, until specialization took over so many aspects of our life. Herbs and bees go back together a long way in the pages of history. Perhaps we can help bring them together again. A garden with bee hives, herbs, flowers, fruiting trees and shrubs, a birdbath, and perhaps a sun dial can be a very pleasant friendly place.

The Ortho book *The World of Herbs and Spices* suggests planting herb gardens around various themes. In the bee garden these herbs will attract and give pleasure to the bees: basil, bergamot, borage, catnip, chamomile, sweet fennel, germander, hyssop, lavender, lemon balm, marjoram, oregano, red clover, rosemary, sage, sweet cicely, thyme, and winter savory.

Rosetta Clarkson, herbal farmer and well-known writer of books about herbs, suggests in her book *Herbs: Their Culture and Uses*, that a bee garden can be a novelty for that gardener in search of something new. She recommends hedges of hyssop or germander, the red bee balm and winter savory. Tall-growing plants near the bee hives might include fennel, daphne, yellow melilot, or lower plants in front of the hives such as lemon balm or sweet cicely. Other

plants loved by bees on her herb farm are borage, bugloss, marjoram, thyme, and lavender.

Thumbing through a good book on honey plants might give you some ideas for flowers, trees or shrubs that could serve a dual purpose in your yard or garden. If you're considering a new shade tree, choose one that will supply your bees with spring pollen or summer nectar, and later on in the fall, provide you with a crop of some kind. I recommend *American Honey Plants* by Frank C. Pellett or *Honey Plants Manual* by Harvey B. Lovell.

When household chores become boring or the cool of the evening beckons, I like to take a brief stroll around the homestead and see how the animals are doing or which fruits or vegetables will be needing my attention. This helps me plan my next day's work. Outside my front kitchen door is a triangular herb bed bordered on three sides by neat clumps of alpine strawberries. In this bed I have sage, southernwood, rue, santolina, lavender, germander, artemisia 'Silver Mound', basil, betony, chives, two kinds of parsley, garlic, chives, and English and lemon thyme. Some of these are for the bees and some are for me. Under a nearby redbud tree is a spreading patch of catmint or catnip backed by monkshood, heliotrope, and lemon lilies. Tender herbs set out in clay pots to be carefully watered and rescued before the first frost include dittany of Crete, rosemary, bay, and costmary. Along the north foundation of the house in damp soil stands spearmint and peppermint.

My next stop is the west garden where I may watch the bees pollinating muskmelons or if the season is early I'll check the blossoms of the fruit trees along the road. A fruit tree in full blossom on a sunny balmy spring day and full of contented busy bees can be a very heady experience, a memory to be savored when the snow blows.

This brings me to the north garden and the black raspberry bushes planted along the north foundation of the big barn. Bees are drawn to all the many varieties of berries and help insure a good crop. I briefly look in on the rabbits and perhaps take them a few comfrey leaves to nibble on or I may throw a few weeds and comfrey leaves over the fence to our Sannen bucks in their private domain well away from our milking goats.

We are in the process of planting three varieties of linden or basswood tree (European, Greenspire, and Red-

mond). In a few years when they begin to bloom they will be included in my bee walk. This brings me to the goat barn where I like to watch the bees zoom over the roof and head for home. Apparently the broad roof serves as a landmark for them whenever they fly north of the farm. The hives are situated on the north edge of our orchard of dwarf fruit trees and when I walk through the orchard making notes of bloom dates or overloaded trees or fruit ready for processing, I generally linger near the hives and watch the bees come and go. If there's a lot to be done, the bees totally ignore me. Beside the orchard is the south garden and here are more vegetables to welcome the pollen forays of the bees. I am especially intrigued by the scarlet pollen baskets as the bees work the inconspicuous blossoms of the tall, fern-like, asparagus plants.

Leading away from the apiary site is a long narrow bed devoted mostly to red raspberries, but the end nearest the bees is planted to more herbs. Here you will find the bees' beloved lemon balm, more lavender, the dainty deep blue blossoms of hyssop, anise hyssop, large clumps of horehound, American pennyroyal for repelling mosquitoes as I work in the gardens on sultry evenings, and bee balm or monarda around the base of the bird bath. Our bird bath has a large rock in the center and I've seen very few birds go near it, but it's always full of bees hauling water back to the hive.

The last stop on the bee walk is the flower bed dominated by a large planting of rhubarb and random clumps of the old-fashioned single hollyhock. The bees don't care for the newer double hollyhock blossoms and neither do I. This flower bed is in a constant state of change but in the future will feature flowers and herbs loved by the bees. Perhaps I'll include meadow sage, purple loosestrife, veronica or even a snowberry bush.

Bees are especially fond of flowers with blue petals and will greedily buzz about the cornflowers, borage, nigella, anchusa, larkspur, or the blue salvias. They like the sweet flowers — sweet alyssum, sweet peas, sweet woodruff, and sweet sultanias. You may find them nuzzling the arabis, ambrosia, coreopsis, the buddleia bush, zinnias, candytuft, mignonette, lupines, angelica, snapdragons, sunflowers, clematis, stocks, poppies, violets, pinks, and the various brooms and heathers. It's impossible to list all the possibilities.

(Continued on page 216)

A Swarm of Bees and a Cardboard Box

By **ARNOLD KASTRUP**
Richfield, OH

MOST BEEKEEPERS will agree that the sooner you get a swarm of bees settled down into a new home, a hive, the better are your chances of keeping that swarm. However, there are lots of times when trying to have a swarm that you can not get a super or hive body near the swarm; then you have to use some other means. I have found a cardboard box works best for me; and even in some cases where I might be able to get a hive body close to the swarm. Per example: A swarm that is some distance away from my apiary; I can put a swarm of bees in a cardboard box and put that in the front seat or back seat of my car, I would not want to do the same with a hive of bees and chance ripping my car seats. Another example: I might be able to carry a hive-body ten to twelve feet up in the air on my extension ladder, but it is so much easier to carry a light cardboard box up the same ladder. Then too, if I did carry a hive-body up the ladder, I would have to have a strong bracket or something to hold my hive-body in place; whereas with a cardboard box, any old clothes line or light rope will hold it in place. The real beauty of getting a swarm in a cardboard box is that I can carry or handle them by myself. The cardboard box only weighs a few pounds, and the bees another few pounds, this I can handle by myself without any trouble. Not that a hive-body of bees is real heavy, but with its cover and bottom board, it is rather hard for one person to carry any distance. If you ask a non beekeeper to help you carry a hive of bees, he will usually run the other way. To round up someone that will help you carry live bees when you need them can sometimes be hard to do, therefore I like my cardboard box.

In regards to getting a swarm of bees into a cardboard box we should borrow the motto of the boy and girl scouts, "Be Prepared". I have seen old time beekeepers pick up a cardboard box the size of a shoe box, and then wonder why they are having trouble getting the bees to go into that box. We should try and think like a bee, the bees send out scouts before a swarm and they are looking for a new home, and most beekeepers should know the size of a bees' home,

and that it is somewhat larger than a shoe box. So with that in mind your cardboard box should be as big as a hive-body. The size box that I like to use is as square as a hive is wide, and as tall as two deep supers are tall. This box should not be too big either; that is if you plan to get it in your car.

In being prepared, I fix or make a bee box at the beginning of the swarm season that I can use over and over again. I carry this box (folded down) in the trunk or back seat of my car at all times. I start by cutting off three of the four flaps from each end of my box. Then I tape or glue these three flaps back in place to the one remaining flap that is attached to the box; what I end up with is one big flap on top of my box and one big flap on the bottom of the box. I can then fold this box flat to carry in my car without any trouble. The reason I make one flap I will try to explain a little later; but for now, let me say I have found it's much easier for me this way. In making my bee box I like to have the hinges of my flaps to the back of my box; then in the front of my box I cut a round one inch hole, in the center and about two inches up from the bottom of the box. This hole will be my entrance for the bees into their temporary cardboard box home.

Now when someone calls about a swarm of bees I go out there with my box; close the bottom flap and seal it with tape. I use either a two inch wide masking tape or a two inch wide duct tape for sealing my flaps. The duct tape works best if you are trying to handle it with you be gloves on. It is almost impossible to handle masking tape with gloves on. Now with the bottom flap taped shut and the top flap wide open I set my box under the swarm the best I can; either on the ground or up in the air on a ladder or branch. If possible I slip my box right over the swarm from the bottom up, of course. Next I take a stick or club and try to knock the bees loose and into my box with one or two good whacks. If you can not knock them loose in this manner, I try to gently brush the bees into the open box with either my bee brush or my bee glove. Once you think you have the queen and most of the bees in the box, im-

mediately close you top flap and seal it with your tape. Here is the first time your one flap in place of four flaps will be easier for you. If you had four flaps and tried to close it on flying bees of a swarm, lots of bees would be trapped in between the flaps. This does not make the bees happy. With only one flap to close it works much smoother, at least for me. Now step back and watch the entrance hole into your box. If the bees are going in like marching soldiers, you have the queen inside. If, on the other hand, the bees are not marching into your box like soldiers, look around for another clump of bees where she might be and try to get this clump into your box by reopening the top flap. After I see the bees going into the box I leave the box right where it is till dark or almost dark in order to get as much of the swarm as I can into the box. I then come back after dark, listen and if the bees are still in my box, seal my entrance hole with my two inch tape. I carry my bees, box and all to my car, and take them to my apiary that night. Where I live the nights are cool enough that I do not have to give the bees any more air as my box is big enough; however, if I lived where the nights were not cool I believe I would put a window with screen over it some place in my cardboard box. I let my cardboard box and bees set in my apiary over night on top of the hive that I plan to put them into in the morning. If rain is predicted, I cover the cardboard box with something waterproof.

In the morning while it is still cool, or just before the bees begin to fly, I open my hive which I plan to put my bees into. If you can rob some frames of honey and a frame of brood from another hive it helps in trying to get a new hive started. Now! I take my cardboard box (note: you will find the bees have settled on the top flap inside you box overnight), and very gently cut the tape holding the bottom flap in place. This I do with either a sharp knife or a razor blade. I do not rip my tape off as this would shake the bees up and they might start flying where and when I do not want them. With this flap cut free, I hindge back my flap and set the open box over the top of the hive. Note: the one

flap was much easier to cut open than four would have been and now it is also easier to hinge one flap back than it would be trying to get four flaps to stay open with only two

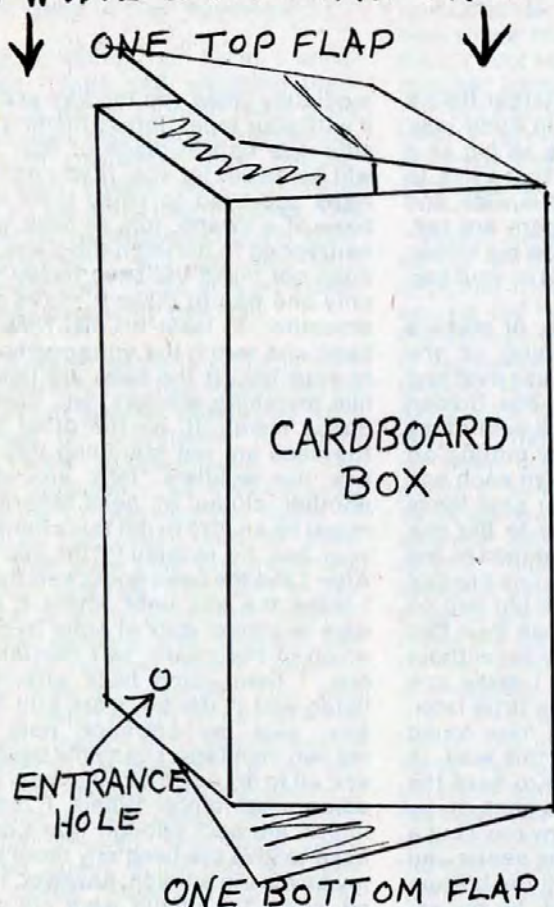
hands. With this cardboard box setting on top of my hive, I whack the top of my cardboard box with the palm of my hand a couple of times to knock the bees off my top flap and down in-

to the frames of my hive.

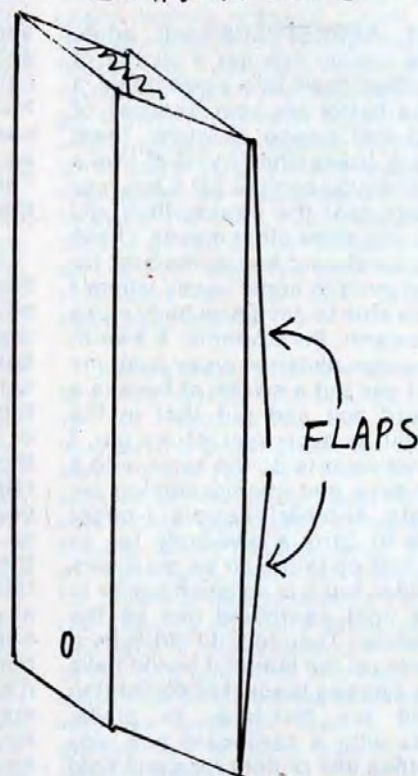
When I see bees coming out of the entrance of my new hive at a good

(Continued on page 215)

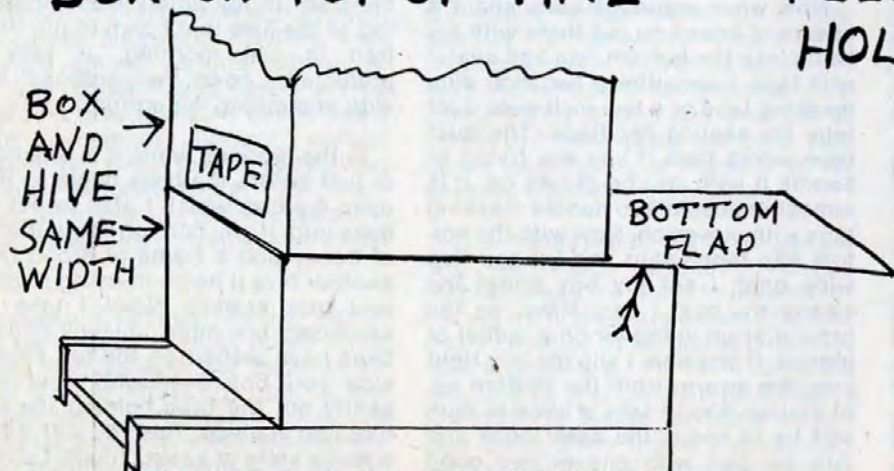
MAKE BOX LIKE THIS



BOX FOLDS FLAT FOR CARRYING

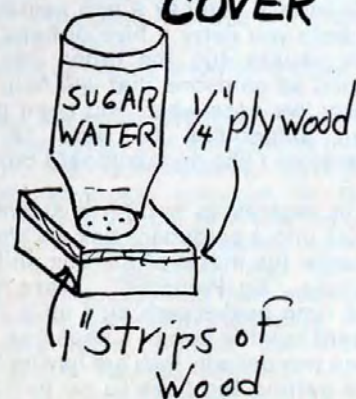


BOX ON TOP OF HIVE



NOTE: THE FLAP HELPS PREVENT BEES FROM ESCAPING HERE ↑.

FEEDER SET OVER HOLE IN INNER-COVER



KASTRUP



Ed Doan, President of the Empire State Honey Producers Association, presenting Ben Gabbert (right) with the "Beekeeper of the Year" plaque.

NEW YORK Empire State Beekeepers' Association

At the Annual Winter Meeting of the Empire State Honey Producers Association held in Syracuse, NY, retiring Apiary Inspector Benson Gabbert received the New York State "Beekeeper of the Year" award. Ben had worked as a bee inspector for 29 years. He is dedicated to disease control and the advancement of beekeeping. The best wishes of his fellow beekeepers and friends go with Ben as he goes into retirement to work his own small commercial beekeeping operation.



G.D. Hieronymus (left) and Kentucky Beekeepers Association President Phillip Horn (right).

KENTUCKY Kentucky State Beekeepers' Association

The photo shows outgoing President, G. D. Hieronymus, on the left and incoming President, Phillip Horn, on the right. Phillip Horn was elected President of the Kentucky State Beekeepers Association for 1981 at their winter meeting.

News and Events



They are holding a placemat which is placed in Kentucky State Parks to advertise honey and other Kentucky products. The placemat is one way the State Association helps promote honey.

OHIO Beekeepers' School

Butler, Hamilton and Warren County are sponsoring the third annual Beekeepers School on April 11, 1981. It will be held at Lakota High School in Hamilton, Ohio.

Registration is at 8:00 a.m. and the program will continue through the afternoon. An \$8.00 fee covers all expenses.

FLORIDA Miami Beekeeping School

An intensive one day BEEKEEPING UPDATE WORKSHOP designed specifically for the sub-tropical beekeeper will be conducted in Miami, Florida on May 2nd. Featured speakers will be Dr. Lawrence Connor, Beekeeping Education Service, Cheshire, Connecticut, Professor Julia Morton, Morton Collection, University of Miami, and John Gregory, operator of The Beekeeper, a Miami-based bee supply outlet.

The program will be designed for all beekeepers, with particular emphasis on the hobbyist and sideline operator.

The day long program will be held at the Howard Johnson Motor Lodge at the Golden Glades interchange of I-95 (16600 N.W. Second Ave., Miami, FL 33169).

FLORIDA Hillsborough Community College Bee Course

A beekeeping course will be held at Hillsborough Community College, Dale Mabry Campus, Tampa, Florida, beginning May 16, 1981 through June 20, 1981. Saturdays from 9 until 1 o'clock.

This course is designed to introduce the beginner to the basic principles and procedures of handling the honeybee colony. Topics include: Honey production, equipment, supplies, control of diseases and processing of honey.

An enrollment fee of \$13 per person is charged. For further information, contact HILLSBOROUGH COMMUNITY COLLEGE, P.O. Box 22127, Tampa, FL 33622.

MICHIGAN Southwestern Michigan Beekeepers' Association

The Bee and Pesticide Co-Existence Seminar will be held on Friday, April 10. Dr. Roger Morse, Professor of Apiculture at Cornell University will discuss research conducted in New York State in 1980 on bee losses due to pesticide use.

Dr. Larry Connor, BES, will provide additional information on the ways pesticides affect honeybees, how to avoid pesticide losses, and what to do after a loss has taken place. He will also describe basic bee colony structure and function and the importance of bees to pollination.

The second program titled A Beekeepers Update Workshop will be held Saturday April 11 at the same facility. The program will feature Dr. Morse discussing: "What do you REALLY need in beekeeping equipment" and "The current status of the Varroa and Acarine mites and the Africanized bees". Dr. Connor will complete the program with discussions on "Nectar and Pollen production and Pollination of plants" and "Queen Production: Stock Selection and Queen Management in the North". A discussion of seasonal management will complete the day's program.

Both day-long programs begin at 9 a.m. with registration starting at 8 a.m. Full program details may be obtained by contacting Bob Allain, 5400 Red Arrow Highway, Stevensville, MI 49127, phone 616-429-3501, as well as reserve a space in either program. The registration fee for each day is

\$15.00 per family, or \$25.00 per family for both days, if made in advance.

Lodging and meal information will be available from Mr. Allain upon request.

NEW JERSEY 1981 EAS Conference

Plans are coming along well for the August 5-8, 1981, 27th Annual EAS Conference at Rutgers University-Cook College campus, New Brunswick, New Jersey.

A 3-Day Short Course in BETTER BEEKEEPING will precede the opening of the Conference, August 3-5th, and will be geared for both the beginner and the advanced beekeeper.

EAS President, Rad Roberts and Chairman of the Board, Jack Matthenius are preparing an excellent program with top bee experts from various parts of the United States.

A Children's Program will be arranged and Child Care will be under the supervision of a Registered Nurse for children 3 to 12 years of age.

In conjunction with the Thursday Ladies Luncheon, Inga Littig is planning for a Fashion Show for the EAS ladies to participate in. Please start making your items of clothing, hats or purses now, so you will be able to enter this enjoyable competitive project.

Mike Valosin is in charge of Conference entertainment. There will be daily "HAPPY HOURS". A 5 pc. Oompah Band will provide music for the (Lobster) Surf & Turf Barbecue to be held at the Log Cabin on Thursday evening.

J. D. Ditson, Chairman of the 1981 EAS Honey Show and his committee have completely revised the EAS Honey Show rules which will be published early in time for all entries.

At the annual Banquet, Friday evening, awards for the Honey Show, Honey Cookery, Gadgets, Beeswax, Mead and Arts & Crafts will be presented. There will be a humorous banquet speaker and musical entertainment.

Bob Harvey, Chairman of the Mall Shows is Planning a Live Bee Beard Contest, supervise Live Bee Demonstrations, Honey Sales and display other interesting live exhibits.

"NEW JERSEY WELCOMES EAS" with Ed Littig in charge. The commit-

tee will provide a display with previous EAS Conference memorabilia.

At the cost of \$5.00 per running foot, Commercial Exhibitors will be invited to set up their displays and sell their wares. Information in regard to this will be available.

The 1981 American Honey Queen has been invited to be with us. We are inviting reigning State or Provincial Honey Queens from states and provinces within EAS territorial boundaries. The 1981 N.J. State Honey Queen, Dale Eschuk and Branch Honey Queens will serve as official greeters or hostesses at the Conference.

Workshops will be conducted by top-notch beekeeping personnel.

Attending this Conference will be a wonderful, 3-Day mini-vacation to bring your family to. There will be three housing options, something for everybody and prices to fit all pocket-books.

Modern, low-cost housing in air conditioned dorms, or non-air conditioned, at a lower cost if you prefer, will be available. Plan to car pool and attend with a friend.

Costs, information and pre-registration application forms will be available from EAS Secretary, Mrs. Rodrigues, 157 Five Point Rd., Colts Neck, NJ 07722, by May 1, 1981.



Marlo Neuberger (left) and Mr. Hybertson admiring the award given by the South Dakota Beekeepers Association.

SOUTH DAKOTA South Dakota Beekeepers' Association

Mr. H. L. Hybertson, Co-Owner of Sky Haven Spray Service, Sioux Falls, South Dakota, was presented the Aerial Applicator of the Year award at the South Dakota Aerial Applicators

Convention in Sioux Falls February 3. Richard Adey presented the award on behalf of the South Dakota Beekeeper' Association.

Sky Haven Spray Service was nominated for the award by Marlo Neuberger, Sioux Falls, Mr. Hybertson has worked closely with Mr. Neuberger advising him of spraying being done within the area of his bee yards. Because of Sky Haven's concern for protecting the honeybee, Marlo sustained no spray damage to his bee colonies even through considerable spraying was done in the area by Sky Haven.

NEW HAMPSHIRE New Hampshire Beekeepers' Association

The spring meeting of the New Hampshire Beekeepers' Association will be April 4, 1981 at Daniel Webster Grange Hall, Webster, NH. At 10:00 a.m. Dr. Lawrence Connor will hold a class on Queen Rearing. The cost will be \$5.00 per person. The Grange will serve a lunch at noon for a small fee.

A Business meeting will be at 2:00 p.m. Speaker Lou Mercier will lecture on Building Your Own Equipment. Dr. Lawrence Connor will lecture on "Why you should and must register your bees".

Sam Cresta will display materials and lecture on making mead wines.

Beekeepers are welcome to our meeting.

NEW YORK Cornell University Short Course

A beekeeping short course is again being held at Cornell University, Ithaca, NY on July 17, 18 and 19th, 1981. Registration will be from 5:00 p.m. to 8:00 p.m. Friday evening. Saturdays program is from 8:00 a.m. to 6:30 p.m. and on Sunday the classes begin at 9:00 and run through 3:30 p.m.

Participants will stay in university dormitories and eat in the university dining room. Enrollment will be limited. The total cost is \$90.00 per person. This includes a single room for 2 nights, 3 meals on Saturday and two on Sunday, all instruction materials and advance registration fee. Double room are 5.00 less per person (\$85.00 total). Full linen service provided. Registration forms from: Office of Apiculture, Dept. of Entomology, Comstock Hall, Cornell University, Ithaca, NY 14853.

CALIFORNIA

Short Courses On Beekeeping At Davis, California

A weekend short course on the life of Bees and Beekeeping will be taught by Dr. Norman Gary, who teaches beekeeping at the University of California, Davis Campus. The course is scheduled for Saturday and Sunday (9-5), May 2 and 3, at the UC Davis Campus at the Bee Biology Facility.

The course will cover the biology, behavior, diseases, management of bees for honey production and pollination, simple procedures for home processing of honey, and many other topics. Special emphasis will be given to the prevention of bee stings. Various films on bees, tape recordings of bee sounds, and displays of beekeeping equipment will be featured. Books, veils, or other equipment are **not needed because this is a lecture course**. Dr. Gary gives special attention to the problems of students and provides plenty of time for questions and discussion.

The above lecture course will be followed by a practical one-day workshop in beekeeping at the same location from 9-5 on Saturday, May 30th. Students will learn how to manipulate colonies of bees, assemble equipment, start new colonies, control diseases, rear and introduce queens, and manage colonies. Methods of honey production and harvesting will be included. Emphasis will be placed on the proper use of beekeeping equipment, the prevention of stings, and the care of colonies.

Students should register as soon as possible.

PENNSYLVANIA

Mansfield State College Bee Course

A short course in Beekeeping is being offered at Mansfield State College, Mansfield, PA from May 6-9. Classes will meet in room 215 of the Retan Center from 6:30 to 9:30 p.m. Wednesday, Thursday and Friday; and from 9 a.m. to 4 p.m. on Saturday. The instructors are H. Lee Hoar, W.W. Clarke, and Jeffrey Clarke. The fee of \$36 is payable to Mansfield State College.

Students will learn basic beekeeping techniques. Course content will include history, duties, and diseases of the honeybee, beekeeping equipment, how to start beekeeping, spring and fall management, swarming, and

marketing honey. A tour of a local honeyhouse and inspection of colonies will be conducted on Saturday.

CONNECTICUT

Annual Meeting

The Annual Meeting of the Connecticut Beekeepers will be held on Saturday, April 25, 1981 in the Donald F. Jones Auditorium of the Connecticut Agricultural Experiment Station, 123 Huntington St., New Haven, starting at 10:00 a.m.

The election of officers for the coming twelve months will take place at the opening business session.

Our speaker for this meeting will be Doctor Thomas Sealey of Yale University. His topic will be:

"COLONY DEFENSE BY THE HONEYBEES IN THAILAND JUNGLES"

The noon break will feature the ever-popular potluck luncheon. Bring something you like for the buffet table. We will furnish the coffee. All beekeepers and friends are cordially welcome to attend. The meeting usually adjourns between two and three o'clock in the afternoon. Please come.

WASHINGTON

Green River Community College Bee Class

Spring quarter classes in beginning beekeeping will be offered at Green River Community College starting April 1st. Classes will be from 7-10 p.m. Wednesdays for 11 weeks, plus one 3 hour field trip. The instructor is Mel Milne. Room 556-GREC Campus, 12401 S.E. 320th, Auburn. FEE \$41.25.

MISSOURI

Central Missouri Beekeepers Assn.

At the January meeting, the following were elected as officers of the club in 1981. They are:

President: Tom Whitecotton of Jefferson City, MO.

1st Vice Pres.: Craig Oliver of Fulton, MO.

2nd Vice Pres.: Dave West of New Bloomfield, MO.

Secy-Treas.: Doug Hartman of Holts Summit, MO.

Liason Officer: Don Zeugin of Jefferson City, MO.

The Association meets at the University Extension Center on Industrial Blvd. in Jefferson City, MO at 7:30 p.m.

A SWARM OF BEES AND A CARDBOARD BOX

(Continued from page 212)

rate I know most of the bees are down in my new hive. I also cut open the top flap of my cardboard box and peak in to see if all the bees, mainly a clump where the queen might be, are off the top inner flap. If only a few bees remain inside my box I lay this box in front of my hive some distance, but not too far. My box fits over the hive so that the open part is over the front of the hive and the frames. The flap which hinges back covers the back part of the frames; this helped me to get the bees to go down into the frames rather than fly out if this part of the frames was not covered.

With most of the bees in my new hive I immediately close this hive off with an inner cover, very gently, to keep all the bees that I can in my new hive. Next, to entice this new swarm of bees to accept their new home I give them sugar water. A boardman feeder, I feel does not work too well with a new swarm, more so if this is a weak swarm. Robber bees might get to the sugar water first this way. I like to feed my new swarm sugar water through the hole in the inner cover. I make a bottle holder out of a square of 1/4 inch plywood and some one inch strips of wood underneath. I put this right over the hole on my inner cover. When I put the top cover of the hive on, I put either two empty shallow supers or one empty deep super on top of my inner cover. The reason I do it this way is I had problems the other way. Bees like to work up and what happened in the other case is that they started to build their own frames right there on my inner cover. By feeding them thru the hole of my inner cover the only frames they can use are the ones I want them too. You will have to watch your new hive to check and see how much sugar water you have to feed them. Here again, thinking like a bee, would you leave a new home, if they are giving you free food, sugar water? □



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LET'S GO FOR A BEE WALK

(Continued from page 210)

The flowers you choose will depend on your climate and soil type. Bees may completely ignore your flowers if a heavy nectar flow is available from a very attractive source such as the sweet clovers.

We have found that having bushes and dwarf trees in the vicinity of the apiary helps in retrieving swarms. Most of our swarms land here and linger while they contemplate their next move.

In late September on a warm, still, sunny day, I picked up my friend, Almita, for a grape-picking excursion. There, leaning on the gate, I watched in fascination as hundreds of bees from her husband's nearby apiary worked a large bed of late-blooming moss rose and stuffed their pollen baskets full of the tiny golden grains. At a time of year when you would normally expect this kind of activity to be at an end, it was a lovely sight. Next year I must include moss rose in my bee walk. □

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QUESTIONS & ANSWERS

(Continued from page 203)

Soaking the pollen filled combs in water may soften the pollen to the point where it can be removed by the bees.

★ ★ ★ ★ ★

Q. In your publication and in others I often find information on pesticides, and lately there has been much attention paid to encapsulated pesticides such as PennCap-M®. This information I find highly useful. However, I am concerned about the effect of systemic pesticides on bees, since this type of pesticide is very popular among farmers in my area of the Northeast on corn and soybean crops. I would appreciate your answer on this topic in either a letter or future article. J.B. New Jersey

A. We agree that PennCap-M® has received much attention recently because of bee kills but as you have suggested other forms of pesticides are still around and could be damaging to bees.

In the March issue of *Gleanings*, 109(3) page 114, the article "Dimethoate: A Contact-Systemic Insecticide That Is Injurious to Honeybees", by Waller and Barker illustrates the potential hazards of systemic poisons.

Pesticides may act on bees as stomach poisons, contact poisons or as fumigants. Bees may also be sprayed or dusted during application. Systemic poisons contaminate the nectar of the plant by circulating through the vascular system. It is important to distinguish poisoning due to systemic action as compared to the contact effects which result from bees coming into bodily contact with poison, which enters through the breathing spiracles. Stomach poisons kill the bees by being taken in through the mouth.

BEEKEEPING TECHNOLOGY

(Continued from page 204)

*Dr. Tew is director of the Beekeeping Technology Program of the Agricultural Technical Institute, Ohio State University. Dr. Tew advises that limited funds are available for competitively-awarded scholarships at ATI. Call 216-264-3911 EXT 263 for information.

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Thank you, Ken, Louise and Children.



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WASHINGTON HOSPITALITY — WASHINGTON HONEY

(Continued from page 197)

didn't have great appeal for me. I was interested in it, however, because in Ireland I learned that they sometimes take their bees to heather/knapweed sites where they may or may not make a honey crop. Looking for knapweed, a term with which I am not familiar, I found, in Jepson's *Manual of the Flowering Plants of California*, the notation that *Centaurea repens*, a native of Asia, called Turkestan Thistle, is also called Russian knapweed. So there it is, a relative of our star thistle of honey fame in California before agricultural development took most of its habitat.

Mrs. Mech responded to our admiration of her honey stand by telling us that she had a demonstration hive there in the summer which makes it even better.

At dinner in the Indian long-house at Tillicum Village I found that the young woman sitting next to me was accompanying a friend who was a freelance photographer shooting the Indian dances. I commented that due to not carrying my camera I had missed a great picture at the Mech honey stand.

Leaving Seattle it took a small carton to hold the beautiful Washington apples, the 6 jars of honey, and all the pamphlets, circulars and other literature that I had gathered. By hand I was carrying one of the clever centerpieces from the banquet table. I learned by correspondence that they were all made by Erla Smith who was also responsible for the registration at the convention. The cut cloth flowers were laid on saran wrap and brushed with Modge Podge, obtainable in hobby shops, which dries clear. They were then peeled off and assembled into bouquets using florist wire.

We certainly had a unique experience as well as a good time thanks to the thoughtfulness of the committee that planned the convention as well as to the personal encounters described. □

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2-lb. w/q	\$4.00	\$5.75	\$7.00
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1 pkg. \$4.85—2 pkg. \$7.00—3 pkg. \$9.00

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1-4 \$6.75; 5-25 \$6.25; 26-99 \$5.85; 100 up \$5.35

CARNIOLAN QUEENS

1-4 \$8.00; 5-25 \$7.45; 26-99 \$6.75; 100 up \$6.25

Prices include shipping, insurance and
special handling.

Queens clipped or marked 50¢ each.

HIGH SHOALS APIARIES

Box 665 B High Shoals, Ga. 30645
(404) 769-6638

THREE BANDED ITALIANS

SERVING THOSE WHO DEMAND THE BEST IN PACKAGE BEES AND QUEENS

	1-9	10-24	25-99	100-up
2-lb. pkg. with young laying queen	\$19.25	\$18.75	\$18.25	\$17.75
3-lb. pkg. with young laying queen	24.00	23.75	23.25	22.75
4-lb. pkg. with young laying queen	30.00	29.25	28.50	27.75
5-lb. pkg. with young laying queen	36.00	35.25	34.50	33.75
Extra Queens	6.50	6.25	6.00	5.75



Queens clipped 25¢ each Queens marked 25¢ each

Queens are Postpaid and Shipped Air Mail.

Package Bees are F.O.B. Shipping Point.

TERMS — Small orders cash, orders \$2.00 per package deposit and balance two weeks prior to shipping date.
QUALITY DOES NOT COST — IT PAYS

THE WILBANKS APIARIES, INC.

Box 12 CLAXTON, GA. 30417 Phone: (912) 739-4820

CARNIOLAN QUEENS (HASTINGS STRAIN)

\$6.25 any number

Air-Mail Post Paid

Carniolan queens by Italian
drones

Delivery begins April
1st. Literature upon request

CRADDOCK APIARIES

5245 Eda Dr.

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Italian

Queens



Production dedicated to the advancement of
Apiculture, for as claimed by Elisha Gallup,
"... around the Queen centers all there is in
Apiculture."

1-24 \$6.50 25-up \$6.00

Clipped & Marked — 50¢ each

Queen's Way Apiaries

1807 Wexley Rd. 812-336-0320 Bloomington, IN 47401

ITALIAN QUEENS 1981

Turn Every Colony Into A "Producer"

1-24 25-99 100-299 300-up

\$7.00 \$6.25 \$5.50 Call for Prices

Marking or Clipping 25¢

Shipped Airmail Postpaid

Fumidil-B Treated

LIVE DELIVERY AND PROMPT

SERVICE GUARANTEED

GLENN APIARIES

(Tom Glenn)

1358 East Mission Rd.

Fallbrook, California 92028

Phone: (714) 728-3731

Now accepting Visa and Master Card.

HOMAN'S

QUALITY BRED CAUCASIAN & ITALIAN BEES & QUEENS

2 lb. w/q — \$20.00 3 lb. w/q — \$25.00

QUEENS 1 - 49 — \$5.50 50 - up — \$5.00

The above prices include postage, special handling, and insurance fee.

Packages to be picked up at our Apiary

2 lb. w/q — 16.00 3 lb. w/q — \$21.50

10% books order. Balance two weeks prior to shipment. Health
certificate furnished.

HOLDER HOMAN APIARIES

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ADIRONDACK MOUNTAIN QUEENS

Italian queens reared and mated in the
"North Country" from established stock of
proven wintering ability. Our reliable "Moun-
tain" strain can take the cold and give you
maximum honey crops year after year.

1-9 10-99 100&up

Mated: \$5.95 \$5.50 \$4.95

Virgins: 2.95 2.50 1.95

Send for FREE catalog

JURICA APIARIES

325 Wells St. Johnstown, New York 12095
(518) 762-3404

TOLLETT APIARIES

Italian Queens

Breeder stock selected in Canada and Northern California for Honey Pro-
duction and Overwintering.

EVERYTHING FED FUMIDIL-B

Queens Available MAY 1st.

1-24 ----- \$6.00 250-499 ----- 4.75
25-249 ----- 5.00 500-up ----- 4.50

Tollett Apiaries

4422 Honey Lane Millville, CA 96062
Phone: (916) 547-3387



P.O. Box 905 Moultrie, Georgia 31768



1981 PRICE LIST

ITALIAN QUEENS

1-5 \$6.75 6-24 \$6.40 25-99 \$6.03 100 up \$5.77
Marking 50¢. Clipping 25¢. Queens sent air mail. \$1.00 deposit per queen to book order. Balance due 10 days prior to shipping.

PACKAGE BEES F.O.B. MOULTRIE

	1-9	10-99	100-699	700-up
2 lbs. w/queen	20.17	18.86	17.83	17.59
3 lbs. w/queen	25.15	23.84	22.81	22.40
4 lbs. w/queen	30.12	28.81	27.78	27.39

\$1.00 allowed for useable cage with cover block. Queenless packages \$4.00 less than above. \$5.00 per package deposit to book order. Balance due 10 days prior to shipping date.

PARCEL POST

Shipping Charges:	1 Pkg.	2 Pkg.	3 Pkg.
2 lbs. w/queen	\$4.28	\$6.41	\$7.94
3 lbs. w/queen	4.78	6.95	8.81

Use above price schedule and add appropriate shipping charges. WRITE FOR FREE FURTHER INFORMATION BY RETURN MAIL. Shipping charges include postage, postal special handling fees, and charges. Insurance for full value of bees only...DOES NOT cover shipping charges.

If shipping loss occurs, have postal official sign statement of loss/postal form #5257 and mail to us with your invoice number.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

"THEY PRODUCE"

ITALIAN PACKAGE BEES AND QUEENS NO DRONES

We ship pure worker bees by your truck, car, trailer or by parcel post. Prices are F.O.B. Funston, Ga. With

Queens	2 lbs.	3lbs.	4lbs.	5lbs.	Queens
1- 24	\$18.50	\$23.25	\$28.25	\$33.50	\$6.25
25-100	\$17.85	\$22.60	\$27.60	\$32.85	\$6.00
101-499	\$17.35	\$22.10	\$27.10	\$32.35	\$5.75
500-up	\$17.00	\$21.75	\$26.75	\$32.00	\$5.50

Clipping Queens 40¢ each — Marking 40¢ each
For queenless packages deduct \$3.00 from above prices
Get worker bees only, don't pay for up to 20% Drones you usually get in your package bees.

Packages can be shipped only by parcel post or your transportation. Get away for a few days, pool your order with your neighbor, pick your bees up here and save the postage. Deduct \$1.00 each if you bring your own usable cages. \$3.00 deposit per package required to book your order — balance due 15 days prior to shipping date. For most desirable shipping dates book your order early.

We feed Fumidil-B in the fall and early spring
Prices subject to change without notice.

Thank you!

Shipping dates April 1st thru May 20th

JACKSON APIARIES
P.O. Box 159
FUNSTON, GEORGIA 31753
Ph. 912-941-5522

Peaceable — Productive — Easy to Handle

BANAT CARNIOLAN QUEENS

Book now — \$7.00 Ea. Ppd. any qty. — Ready April 20

ADAMS & BREMER

Rt. 1, Box 170, Marion, MD 21838 Phone (301)957-1284/ 623-8257

Queens & Packages

TABER APIARIES

VACAVILLE, CA 95688

2412 Pleasants Valley Rd.

Phone: (707) 448-7130



QUEENS

1-10	\$7.00
10-25	6.00
100-	5.00

Full Colonies-\$50.00

NUCS

5-Frame Nucs

1-5	\$30.00
5-10	28.00
100-	24.95

5-Frame Nucs exchange assembled Frames & Foundation-Deduct \$5.00

Queens are sent postpaid, airmail.

Phone order in for early arrival

April & May—Loading Trucks 500-1000 Ask for price

Hubbard bees produce big crops of honey. 3-Banded Italian daughters of proven selected stock. Good wintering ability. Hardiness and gentleness. Rapid spring buildup.

Hubbard Apiaries

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Bellevue, FL 32620

Ph: 904-245-2461

SPECIAL SPECIAL SPECIAL
Package Bees By Parcel Post
THREE BANDED ITALIANS

**Why Settle For Anything Less,
 When You Can Get The Best.**

PRICES EFFECTIVE MAY 10th

	2-lb. w/q	3-lb. w/q
1-9	\$16.00	\$20.00
10-24	15.00	18.75
25-99	14.75	\$18.50
100-up	14.50	18.25

This price includes Postage, Insurance and All Handling Fees. If package arrive damaged file claim for insurance with your Post Office for loss.

G. D. McCARY & SON BEE CO.
 P.O. Box 87 Buckatunna, MS 39322
 Phone 601-648-2747



PACKAGED BEES
 QUEENS
 WAX

2-lb. pkg. — \$20.05
 3-lb. pkg. — 24.00
 Queens — 5.50

F.O.B. Box 253, Sylvester, GA 31791
Piersons Honey

BOX 37
 WEST ELKTON, OHIO 45070
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SELL

HONEY

FOR

GOODNESS

SAKE

Italian Queens and Packages

SNAPP'S APIARIES
 Rt. #1 Quincy, Ohio 43343
 Phone: 513-585-6573

After January Contact me at:
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 Thomasville, GA 31792

**ITALIAN
 3-FRAME NUCS**

IN DISPOSABLE BOXES
 HEALTH CERTIFICATE
 FURNISHED

\$37.50 POSTPAID

ADAMS APIARIES
 RT. 1 Box 92
 JEANERETTE, LA 70544
 PH: 318-369-3683
 Before 8 AM after 5 PM

QUEENS

Italian Caucasian

Nice Large Queens

1-24 25-99 100-up
 \$6.40 \$5.75 \$5.25

For packages see March ad

Clip 50¢ each

Mark 50¢ each

Fumidil B fed to nuclei

Queens after May 15th

1-24 — \$4.25 25-up — \$4.00
 Order 1 or 1,000

MITCHELL'S APIARIES

Bunkie, LA 71322
 Phone: (318) 346-2176

**CLEAR RUN
 APIARIES**

AMOS McLAMB
 P. O. Box 27
 Harrells, N. C. 28444
 (919) 532-4782

MRAZ QUEENS

Productive Winter Hardy

1-24 ... \$7.25 25-100 ... \$6.50
 100 & up ... \$6.00
 (clip & mark 25¢ each)

Shipped Airmail, Postage paid from
 April 1st.

Live delivery Guaranteed
 10% to book, balance due
 before shipment.

ITALIAN BEES & QUEENS

1981 PRICE LIST

"IT PAYS TO BUY QUALITY"

In Lots Of	Queens	2-Pound & Queen	3-Pound & Queen	4-Pound & Queen	5-Pound & Queen
1-10	\$6.00	\$19.00	\$23.15	\$29.25	\$35.25
11-99	5.50	18.50	22.50	28.75	34.90
100-up	5.25	17.75	22.00	28.25	34.35

Mark Queens — 25¢

Clip Queens — 25¢

POSTAGE CHART —

1-2# \$4.35 1-3# \$4.65 1-4# \$5.25 1-5# 5.50

If ordering by mail, add postage prices to packages.

HARDEMAN APIARIES

Mt. Vernon, Georgia 30445

Phone: 912-583-2710

NUCS

WOODWORTHS

EST. 1948

OUR REPUTATION IS QUALITY & SATISFACTION

NUCS

5 Frame Nucs

50-499 — \$30.00

500 & up — \$28.00

(\$2.00 Delivery Charge)

OR

Let us stock your

equipment for

only \$23.50

(You deliver & pickup)

We also have a limited supply of:

Brood W/Bees — \$6.00 fr.

Bulk Bees — \$4.00 lb.

20% Deposit to book orders — Balance on delivery

NUCS AVAILABLE MARCH 20 & MAY 1

(ALL PRICES FRAME EXCHANGE)

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701-878-4410

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Hebron, ND 58638

W.H. Woodworth

701-225-2933

342 8th St. W.

Dickinson, ND 58601

B.J. Woodworth

701-938-4647

Rt. 2, Box 7

Halliday, ND 58636

After Feb. 20, Contact us in Texas

713-569-6696 or 713-858-3636

P.O. Box 2107

Nac., TX 75961

P.O. Box 68

Alto, TX 75925

BROOD-N-BEES

BULK BEES

1981 Prices

Hastings Carniolans & Italians

3-fr. nucs — Sealed brood on

every frame. \$37.00 postpaid.

Write for pickup prices. All cell builders

& mating hives fed Fumidil-B

QUEENS

Hastings Carniolans

1-24 \$7.00 25-99 \$6.75 100-up \$6.50

Italians

1-24 \$6.00 25-99 \$5.75 100-up \$5.50

Perrin's Apiaries

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Ponchartraine, LA 70454

Phone: (504) 386-2238

Queenrite Queen Apiaries

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Riverside, CA 92509

Phone 714-685-7675

"Depend on us for guaranteed queens that go
for it."

Double-grafted Italians

1-5 — \$5.75 5-up — \$5.00

BULK BEES

\$6.00 lb.

2 lb. pkg. w/q \$18.00

RICKARD APIARIES

Rt. 1, Box 2241

Anderson, CA 96007

916-365-5551

916-365-6557

ITALIAN QUEENS &

PACKAGE BEES

FROEHLICH APIARIES

WOODLAND, CALIF. 95695

P.O. Box 186

Phone: 916-666-4542

Dept. C

ITALIAN QUEENS

Post Paid — Live Delivery —

Air Mail

1-10 \$6.00

11-99 5.25

100-up 5.00

HIGHEST QUALITY

Clipped 30c

Marked 30c

DEPENDABLE SERVICE

Shipping starts April 1st. — Terms — Cash before Shipment

RAY'S HONEY FARM

Phone
Before March 1st
WI 414-734-4017

Raymond C. Meyer

P.O. Box 606

Mascotte, FL 32753

Phone
After March 1st
FL 904-429-3858

THE STOVER APIARIES, INC. MAYHEW, MS 39753 PHONE 601-327-7223

1981 PRICE LIST PACKAGE BEES & QUEENS

ITALIANS

STARLINE

IN LOTS OF	QUEENS	2-POUND & QUEEN	3-POUND & QUEEN	4-POUND & QUEEN	5-POUND & QUEEN
1-9	\$6.60	\$20.00	\$25.50	\$31.00	\$34.50
10-99	\$6.40	\$18.75	\$24.50	\$29.25	\$33.50
100-up	\$6.00	\$18.00	\$23.50	\$27.50	\$32.50

STARLINE QUEENS ARE 75¢ EXTRA.

PARCEL POST SHIPPING CHARGES

	1 Pkg.	2 Pkg.	3 Pkg.
2 Lbs. W/Queen	\$4.50	\$6.50	\$8.00
3 Lbs. W/Queen	5.00	7.00	8.75
4 Lbs. W/Queen	5.75	8.50	
5 Lbs. W/Queen	6.25	9.25	

SHIPPING CHARGES INCLUDE POSTAGE, SPECIAL HANDLING AND INSURANCE.

PLEASE ADD THESE CHARGES TO YOUR PARCEL POST ORDERS.

QUEENS ARE SHIPPED POST PAID.

Packages can only be shipped parcel post. To book parcel post orders, check or money order must accompany order. Prices are subject to change.

Live delivery on package bees can only be guaranteed until May 20th.

Marking and/or clipping of queens is 50¢ extra per queen.



Norman's
Italian Bees & Queens
2 lb. pkg. w/q — \$17.00
3 lb. pkg. w/q — \$20.00
Young laying queens
1-10 \$5.50 11-24 \$5.25
25-up \$5.00

Insured and Airmail paid for queens.
Bees bred from top honey producing
colonies. We would appreciate an
order from you. Health certificate
furnished.

NORMAN BEE CO.

Route 1 Ramer, Ala. 36069
Telephone: 205-562-3542

BUSBY'S ITALIAN BEES

— Proven Honey Producers —

(Postage Paid, includes Insurance & Special Handling)

In Lots of	Queens	2-lb. w/queen	3-lb. w/queen
1	\$6.75	\$25.50	\$29.50
2-25	6.25	22.50	27.50
25-99	6.00	21.50	26.50

Truck Orders

1-99	6.00	18.50	23.00
100-up	5.50	17.00	21.50

BUSBY'S APIARIES

Rt. 3, Box 253 Bogalusa, La. 70427 Phone 504-735-5330

HARPER'S High Quality ITALIAN

Queens and Packages
2-lb. pkg. w/q — \$18.50 ea.
3-lb. pkg. w/q — \$24.50 ea.
Queens
\$6.50 ea.

20-up \$6.00 ea. — 100-up \$5.50 ea.

We pay air mail charges on queens.
Postal charges on packages paid in advance
by customers.

Live arrival guaranteed thru Zone 5.
We appreciate your business

Harper's Apiaries
New Brockton, Al 36351
Phone (205) 894-2246

WILDWOOD APIARIES

Box 161-B, Starkville, Mississippi 39759 Ph. (601) 323-2341

MRAZ QUEENS

FRUGAL

PRODUCTIVE

DISEASE RESISTANT

Booking orders for 1981 Queens from about April 5, depending on weather.

1-24 \$7.25 25-99 \$6.50 100-up \$6.00

Price good through October 1981

Clip or mark 25¢ 1-10 Cash with orders.

11 & up 15% to book, balance due 15 days before shipment

LIVE DELIVERY GUARANTEED TO U.S. & CANADA. Queen yard manager is Page Simpson.
who has been working bees since 1928 and producing good Queens since 1949.

FARRIS HOMAN
Shannon, Mississippi 38868
Phone: (601) 767-3960

Package Bees

Headed with either strain queen
Caucasian or Italian

Shipments Start April 15th

They Rank Tops In Honey Production

	1-24	25-99	100-up
Queens	\$ 6.00	\$ 5.75	\$ 5.50
2-lb. W/Q	16.50	16.25	16.00
3-lb. W/Q	22.00	21.50	21.00
4-lb. W/Q	27.50	27.25	27.00

Above price does not include shipping charges on package bees. Queens postpaid airmail — 25¢ each extra for marking and clipping. Please make remittance 10 days prior to shipping date.



CAUCASIAN — MIDNITE — STARLINE

"DOUBLE HYBRID"

on request

	1-10	11-39	40-99	100-499	500-up
Caucasian Queens	\$7.25	\$6.70	\$6.25	\$5.90	\$5.75
Midnite Queens	7.75	7.20	6.75	6.40	6.25
Starline Queens	7.75	7.20	6.75	6.40	6.25

"DOUBLE HYBRIDS" same price as regular hybrids. For clipping and/or marking add 50¢ per queen.

WRITE FOR TRUCKLOAD QUANTITIES. PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

HOWARD WEAVER & SONS

Rt. 1, Box 24

Navasota, Texas 77868

Phone 713-825-7714

**1981 PRICES
ITALIAN QUEENS AND BEES**

w/q	1-10	11-99	100-up
2-lb. pkg.	\$18.35	\$18.00	\$17.50
2 1/2-lb. pkg.	20.85	20.50	20.00
3-lb. pkg.	23.15	22.50	22.00

WRITE OR CALL FOR LARGER ORDER PRICES
AND/OR POSTAGE RATES

PACKAGE PRICES \$2.00 LESS PER PACKAGE
AFTER MAY 15, 1981

Packages shipped F.O.B. — Baxley, Georgia

QUEEN PRICES INCLUDE POSTAGE

ALL QUEENS FED FUMIDIL-B

No. of Queens and Price	1-10	11-99	100-up
	\$5.75	\$5.50	\$5.25

Marked: \$.30 ea. Clipped: \$.30 ea. Tested: \$.75 ea.
TERMS: Orders \$100 or more, 10% deposit and
balance due 2 weeks before shipment—others,
cash with order.

Plantation Bee Company, Inc.
P.O. Box 1087, 101 Kissingbower Road
Vidalia, Georgia 30474
Telephone: 912-537-9249

F. W. JONES & SON LTD.

1878 — 1981

ATTN.: BEEKEEPERS IN THE NORTHEAST

Italian & Caucasian Bees Available at Competitive Prices (U.S.\$)

	1-5	6-24	25-99	100 +	+ Transport
Queens	\$ 7.15	\$ 6.90	\$ 6.65	\$ 6.20	—
2 lb. Pkg.	22.55	21.70	20.85	19.50	2.75
3 lb. Pkg.	28.90	27.80	26.70	25.05	3.20
4 lb. Pkg.	35.80	34.45	33.05	31.00	3.30

Postage not included — Loads each week April 15 — May 15

Pickup Bedford or We Mail Packages from Vermont

— LIVE DELIVERY GUARANTEED — ALSO A COMPLETE LINE OF BEE SUPPLIES

44 Dutch St., Bedford, Que.
Canada J0J 1A0 514-248-3323

68 Tycos Dr., Toronto, Ont.
Canada M6B 1V9 416-783-2818

Featuring BUCKFAST Queens

PRICES OF QUEENS — Postpaid

QUANTITY	ITALIAN	BUCKFAST	
1 - 4	\$7.50	\$8.10	For clipping add 25¢
5 - 31	6.90	7.50	For marking add 35¢
32 - 99	6.40	7.00	For both C/M add 60¢
100 - 999	5.90	6.50	
1000 & up	5.80	6.40	

Write for prices for Package Bees and available shipping dates.

WEAVER APIARIES, INC.

Rt. 1, Box 256

Navasota, TX 77868

Phone 713-825-2312

Established 1888

CAUCASIANS & ITALIANS

DAVID MIKSA

MIKSA HONEY FARMS

Rt. 1 Box 820 Groveland, FL 32736
Phone: 904-429-3447

- *Tested Grafting Stock
- *Fumidil-B fed Apiaries
- *19 yrs. experience in queen rearing
- *All Queens insured & postpaid airmail
- *Full payment required before shipment
- *Shipping date March 15 through May 15
- *Minimum 25 Queens per shipment \$5.50 Per Queen
- *Clipping and/or marking 50¢ extra

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1-5 QUEENS \$7.00 ea.

over 5 QUEENS \$6.00 ea.

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BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual

Subscription (Sterling cheque 2.22 p.or U.S. \$6.) Post paid. The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS.

INDIAN BEE JOURNAL Official organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411030. The only bee journal of India Published in English, issued quarterly. Furnishes information on Indian bees and articles of interest to beekeepers and bee scientists.

Annual subscription postpaid in foreign countries: For individuals US \$7.00 for institutions, companies and corporate bodies US \$10.00 or it's equivalent, to be received in advance by IMO or bank draft, payable in Poona (India).

SCOTTISH BEE JOURNAL. Packed with practical beekeeping. Sample copy from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. Published Monthly, \$4.00 per annum.

THE INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. **IBRA PUBLISHES: Bee World**, a quarterly journal for the progressive beekeeper. **Apicultural Abstracts**, a survey of scientific literature from all languages. **Journal of Apiculture Research**, for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership \$1. Specimen copy of **Bee World** \$1.50; **Journal of Apicultural Research** \$1.50; **Apicultural Abstracts** \$2.00, from **INTERNATIONAL BEE RESEARCH ASSOCIATION**, Hill House, Gerrards Cross, Bucks. SL9 0NR, England.

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RENDERING every day in our all new plant. All honey saved from cappings. Rendering slumgum and old combs. Write for **FREE** shipping tags and rates. **HUBBARD APIARIES**, Onsted, Mich.

Meads, Melomels, Metheglins. Your honey, our knowhow. Free recipes and catalogue. **Bacchanalia**, Box 51BC, Central Village, MA 02790.

BEEKEEPERS PLANNING Guide & Record Book helps keep track of income, expenses, inventory, production, beeyard information. Includes year-round management planner \$3.25 post paid. M. Chatelain, P. O. Box 1373, Baton Rouge, Louisiana 70821.

EMBLEMS CUSTOM EMBROIDERED: for club or business. Minimum ten. Write: TLM28, 1929 East 52nd, Indianapolis, 46205.

HONEY STRAINER, fine mesh fabric bag, approx. 18" x 20", Instructions, Practical, Convenient, reusable. Ppd. \$3.00 each, 2 up \$2.50 each, Beckman G12, Box 633, Stuart, FL 33495.

THE A. I. ROOT CO. is temporarily out of sugar. Please call us at 216-725-6677 for future availability. Thank You.

CUT-COMB PACKAGE THAT SELLS! Also baked goods, etc. Uses household materials, less than 4¢. Details \$1.00 SASE packet, Dept C2, 820 Kinsman, N. Bloomfield, Ohio 44450.

OHIO BEEKEEPERS — I will again be trucking bees to Ohio from Alabama. If you are interested in package bees call (513) 653-5727 or write 800 Miami St., Urbana, Ohio 43078 — J.L. Rockhold.

HOBBYIST & COMMERCIAL Beekeepers, why pay higher prices, for beekeeping equipment, make your own, for a fraction of the cost of manufactured goods. Send: \$4.50 p.p.d. for diagrams. To: R. C. Slack, P.O. Box 227, Cecil, Wisconsin 5411.

POLLEN TRAP. Bottom Hive Trap. Completely painted and put together. Write or call for information and photos. Champie Pollen Co., 5118 North 18th Ave., Phoenix, AZ 85015. Phone 602-277-0482.

TECHNICAL SERVICES; registered professional engineer specializing in PLANTS and EQUIPMENT for EXTRACTING, FILTERING, BOTTLING. Clifford Tennenhouse, P.E., 1876 Boulan, Troy, Michigan 48084

BUY TODAY FOR PROTECTION TONIGHT — Burglar Alarm with Light! Has bright light and blasting shriek no bigger than a pack of cigarettes. Runs on inexpensive penlite batteries. Order Yours Today \$4.95. Allow 4 to 6 wks. Delivery. C&S International, 5677 Lafayette Rd., Medina, Ohio 44256.

CAPTURING WILD HONEYBEES — Booklet on finding and hiving wild honeybees — \$2.50. Instructions to build a bee vacuum — \$1.00. Fair winning HONEY BAKERY RECIPES and others — \$3.00. 20 delicious RABBIT RECIPES — \$1.50. Piney Wood Apiaries, 18265 Rt. 700, Hiram, Ohio 44234.

SIMPLY DELICIOUS! Brandy Bounce made with fruit and honey. Special idea for brandied cherries. \$2.00 SESE. Sunblossom Apiaries, Rt. 2, Algoma, WI 54201.

WANTED

WANTED—All varieties bee gathered pollen. Must be clean and dry. Pollen traps available. Hubbard Apiaries, Onsted, Mich. 49265. Phone: 517-467-2151.

WANTED — Old Beekeeping Books and Bee Journals. James Johnson, 107 State Ave., Terra Alta, W.V. 26764.

ALMOND POLLINATION NEEDS YOU. Build your colonies while making money. POLLINATION CONTRACTING. A brokerage firm now arranging contracts and offering reliable service in Central Calif. Hicken 209-823-1386.

MIGRATORY OPERATION from South to North or Northwest. Experienced in queen breeding, honey, and package production. Good worker, truck driver. P O Box 27, Donald Barnard, Cade, LA 70519.

ROYAL JELLY

SUPER STRENGTH Royal Jelly capsules, 100 milligrams per bottle of 100, \$12.50; five bottles, \$60. Prairie View Honey, 12303 12th St., Detroit, MI 48206.

PURE FRESH Royal Jelly, 2 oz. bottle, \$19 pp.; 1 lb. \$120. Prairie View Honey, 12303 12th St., Detroit, MI 48206

POLLEN

FRESH, PURE, Bee Pollen available in 1 pound containers at \$8.50 per pound. 10 pound bulk pack at \$7.90 per pound. Large lots, ask for price. Hubbard Apiaries, Inc., Onsted, Mich. 49265.

POLLEN TRAP. Bottom Hive Trap. Completely painted and put together. Write or call for information and photos. Champie Pollen Co., 5118 North 18th Ave., Phoenix, AZ 85015. Phone 602-277-0482.

HELP WANTED

A BEEKEEPER with at least 3-5 years experience in all aspects of queen rearing; to work in Texas in spring and N. Dak. the rest of the year. The annual salary will be \$10,000 plus a bonus based on honey production, which could be up to \$18,000; also paid vacation and holidays, health ins., and retirement program with housing available in ND. Reliability and honesty a must. Dick Ruby, Milnor, N.Dak. 58060; 701-427-5263 or 713-423-5143.

BEESWAX

BEESWAX WANTED — Highest prices paid in cash or trade for bee supplies. The A.I. Root Co., Medina, OH 44256; Council Bluffs, IA 51501; San Antonio, TX 78204. Box 9153.

BEESWAX WANTED — Small lots to truck loads. Write or call. DONALD SCHMIDT, 859 W. 9th Street, Winner, SD 57580. PH: 605-842-0350.

BOOKS

FIFTY YEARS AMONG THE BEES. Dr. Miller's classic now reprinted. \$7.95 softcover, \$12.50 hardcover. \$1.00 postage. New York residents add 6% tax. Molly Yes Press, RD 3, New Berlin, NY 13411.

WANTED TO buy Honey and Your Health and/or Bee Venom Therapy By Bodog Beck. Name your price, write: Robert Kessler, 6901 Ardelle Dr., Reynoldsburg, OH 43068.

SELLING BEE BOOKS: Dispersal Catalog \$2.00. George Land, Herndon, PA 17830.

PROPOLIS

PROPOLIS U.S.A. has stopped buying propolis until further notice. Sorry, it's moving as slow as the rest of the economy. Will notify when market picks up again.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. Hubbard Apiaries, Onsted, Mich.

CLOVER, ALFALFA, Buckwheat, Tulip Poplar, Wild Flower, or Orange in 60's. Dutch Gold Honey, Inc., 2220 Dutch Gold Dr., Lancaster, PA

HONEY IN 60's FOR SALE. Bedford Food Products Co., 209 Hewes St., Brooklyn, New York 11211. Telephone: 212-EV4-5165.

CLOVER, ORANGE, U.S. and Yucatan Wildflower, in sixties. Other flavors and bakery grade available. MOORLAND APIARIES, 5 Airport Dr., Hopedale, MA 01747.

FIFTEEN TONS white honey in 60's. All or in lots. Old world Honey, Box 71, Arlee, MT 59821. 406-726-3480.

HONEY FOR SALE: Clover in drums. Don Kohn, Withee, WI 54498. Phone: 715-229-2297.

HONEY WANTED

BEEKEEPERS TAKE NOTICE — We cannot guarantee honey buyers' financial responsibility, and advise

all beekeepers to sell for CASH only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED — HONEY, all grades, Send samples and price. M. R. Cary Corp., Box 818, Syracuse, N. Y. 13201.

HONEY WANTED—Any quantity in cans or drums. Walker & Sons Apiaries, Box 415, Milford, Mich. 48042. Phone: 313-684-2935.

BUCKWHEAT, light and light amber honey. Bedford Food Products, Inc., 209 Hewes St., Brooklyn, N. Y.

WANTED: All grades of honey in 60's or drums, truck or rail, car load lots. Send sample and price to DUTCH GOLD HONEY, INC., 2220 Dutch Gold Dr., Lancaster, PA 17601

All Grades of Honey, Any quantity drums or cans. Call Toll Free 800-248-0334. Hubbard Apiaries, Inc., Box 160, Onsted, Michigan 49265.

WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, OH.

WANTED: comb and all grades of extracted in 60's or drums. Send sample and price to MOORLAND APIARIES INC., 5 Airport Drive, Hopedale, MA 01747.

WANTED—All grades of extracted honey. Send sample and price to MacDonald Honey Co., Sauquoit, New York 13456. Area Code 315-737-5662.

IF YOUR honey is better, I'll pay you more. U.S. or Foreign. Cans, drums. Sample: Allan Hardman, Kawana Honey Company, 2100 Kawana Springs Road, Santa Rosa, CA 95404. (707) 528-4377.

HONEY WANTED: All varieties, any quantity, also comb honey. Office 612-464-4633. Residence 612-464-7476 — 612-462-4774. Nature's Treat, 6764 W. Bdwy., Forest Lake, MN 55025.

SEEDS

SEEDS OF HONEY PLANTS. 15¢ postage brings descriptive price list catalog; \$3.25 for one packet seed each 5 annual bee flowers and catalog. Pellett Gardens, Atlantic, Iowa 50022.

BUCKWHEAT! WHITE BLOSSOM SWEET CLOVER! We have both of

these to offer in any size bag that you need. Call or Write: CAUDILL SEED COMPANY; 1201 Story Avenue; Louisville, KY 40206. Call us Toll Free: Inside Kentucky: 1-800-722-5011; Outside Kentucky 1-800-626-5357.

POSITION WANTED

HARD WORKING SINGLE MAN, 8 years experience as hobby beekeeper, wants work with progressive commercial operation. Seasonal or permanent. Keith Jackson, Rt 2, Box 135A, Marthasville, MO 63357. (314) 433-2433.

BEES & QUEENS FOR SALE

WE USE ALL POSSIBLE CARE in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

NUCS — 81 Starlines. Your equipment — you haul. \$18.00 — 5-6 frames brood by May 1st. Homestead Apiaries, RR 1, Box 119, Cannon Falls, MN 55009.

MARYLAND BEEKEEPERS and adjacent states: Package Italian bees for pickup April 11-12 near Frederick, MD (queens fed Fumidil-B). 2lb. pkg. \$21.00; 3lb \$25.50. \$4.00 per pkg. books order. Ernie's Apiaries, 9933 Kelly Rd., Walkersville, MD 21793. 301-898-9746.

NORTHERN CALIFORNIA ITALIAN QUEENS. April 1-May 15. 1-5 \$6.00, 6-25 \$5.50, 26-99 \$5.25, 100 up \$5.00. After May 15: 1-5 \$5.50, 6-25 \$5.00, 26-99 \$4.75, 100 up \$4.50. Ship air mail post paid and insured. Live delivery guaranteed. Backman Apiaries, 1801 Calin Lane, Anderson, CA 96007. Phone 916-365-4029.

ITALIAN QUEENS — APRIL 1-MAY 5: 1-5 \$6.50, 6-24 \$6.25, 25-99 \$6.00, 100-499 \$5.50, 500 up \$5.00. AFTER MAY 5 20% off RICKARD APIARIES, Rt 1, Box 2241, Anderson, CA 96007. 916-365-5551; 916-365-6556.

THREE HUNDRED SINGLE STORIES — Available May 21. Waubay, S.Dakota or Hastings, N.Dakota. 20% to book balance 15 days before pickup. \$48.00 each. Richard Walters, Waubay, S.Dakota 57273. 605-947-4532 After 6:00 p.m.

Three hundred seventy six 1½ story hives, 25 locations near Whiteville, NC. 113 hives, 3 locations near Conway, SC \$55.00 hive, all or part. 4000 gallon tank, 500 feeding buckets etc. Call 813-474-9423. Norman Sharp, 500 Sandlor Drive, Englewood, FL.

May 1st. 200 standard hives with new queens. \$45.00 20% booking. 813-635-3381.

PACKAGE BEES delivered to Wisconsin near Green Bay, Eau Claire and at my home. Ronald Hazard, RT 2, Poynette, Wis 53955. Phone: 414-992-3217.

2-lb. packages. Italians with queen. Order early. Pick up Owatonna mid-April 507-451-7713. Gene Karaus, R2, Owatonna, MN 55060.

SINGLE STORY beehives for sale in excellent condition. Must sell all. Other equipment available. Please call 701-746-9723 or call John Marshall 1-800-231-3252.

NUCS — four frame Italian. Shipped postpaid \$32.00. Small orders only. Johnny Pennington, 194 Cooper-Hurst Rd., Pearl, Mississippi 39208, Phone (601)939-5994.

STRONG ONE STORY hives available May 1st for pick up at Whiteville, NC. \$55.00 each. Call 813-474-9423, Norman Sharp, 500 Sandlor Dr., Englewood, FL 33533.

PACKAGE BEES — pick up in St. Paul, MN April 18. Now booking orders. Please book early, limited supply. Write J.B. Apiaries, P.O. Box 6626, St. Paul, MN 55106.

FIVE HUNDRED COLONY operation in Colorado. Write Gleanings, Box JH, P.O. Box 706, Medina, Ohio 44256.

ONE HUNDRED 2-story, 8-frame colonies bees with excluder, 3-6% supers with 7 drawn combs. \$65.00 each. Hiltner's Apiaries, Continental, Ohio 45831, Phone 419-398-2393.

FIVE HUNDRED to 1000 hives — Share crop or Share crop purchase. Salary advances available. Call or Write Hamilton 612-645-2221 or eve. 488-3339. 1570 W. Van Buren, St. Paul, MN 55104.

TWENTY FIVE TO 28 strong two story 9% ten-frame colonies. Also 60 honey supers, 6% ten-frame drone combs. Everything in excellent condition call (805) 484-3418 in Camarillo, California.

FOR SALE: 20 strong singles — \$45 each. Charles Cook, 410 E. Roca; Refugio, TX 78377; 512-526-4758.

FOR SALE: 500 one story and two story colonies of bees. Your choice at \$55.00 and \$70.00 each. Write John Brant, Westport, NY 12993.

FOR SALE: 100 colonies, 2 stories high. Irving Gable, Rt 1, Romulus, NY 14541. Phone: 315-549-8246.

FOR SALE: 50 ten frame double story colonies. \$70 per hive, extra deep supers available. 816-778-3675.

NUCS 5-frame \$45, strong single story hive \$60, 1981 Queens, May 81. Se Orange, West Chester County 914-478-3990.

FIVE HUNDRED single story colonies available approximately April 20th. Also, 200 five frame nucs available approximately May 20th. Laurence Winter, Wolcott, NY 14590. 315-594-8539.

QUALITY QUEENS, 1-25 \$6.25; 25-100 \$5.25; over 100 \$5.00. Fed fumidil B and shipped in batteries. Call Bob Hoyle, Rt 1, Box 115A-10, Bastrop, TX 78602, (512) 321-3292.

ITALIAN BEES AND QUEENS Open dates in April and May 1981. Let Miller Bros. load your truck. Call 205-573-2263. Miller Bros., Safford, AL 36773.

SINGLE STORY \$45. Two story \$60. New Caucasian Queen, Stearns, 4605 Red Start, Houston, TX 77035.

TWELVE HUNDRED COLONIES, Northern NY 35 locations - 76% packed 2 deeps, 1 shallow - the rest 2 deeps. 3600 5-11/16 extracting supers. Will sell as one lot or a minimum of 50 with 3 5-11/16 extracting supers for each colony. We will have 5 frame nucs from South Carolina the 15th of May for sale \$35 each transferred into your equipment. Smith and Alton Apiaries, Antwerp, NY 13608. Phone 315-659-8670.

FOR SALE: 30 colonies of bees. Also 4 x 5 fences, holders, section, section boxes, and shipping cases. John Seitz, Canastota, NY 13032. Phone 315-684-9069.

TWO POUND PACKAGE bees end of April. Large Wisconsin orders delivered. Larry Bergmann, Mellen WI 54546, 715-274-7501.

QUEENS — 1-24 \$5.50 — 25-99 \$5.25 — 100-up \$5.00.

Cameron Apiary, Rt. 1, Box 133, Barnwell, SC 29812, Ph. 803-259-2290.

ONE HUNDRED COLONIES 8-frame, two-story colonies. All new covers some new bottoms. Port Austin, Michigan, Phone: 517-738-7662.

FOUR HUNDRED 3-frame nuclei, all or part. Package bees and queens, queenless bees, and brooding bees. Walker Apiaries, Rt. 1, Box 34B, Rogers, Texas 76569, Phone: 817-983-2891.

COMPLETE TWO THOUSAND hives operation on pallets, All super standard 10-frame deeps. Two Chev. truck, two fork lifts all stainless steel extracting equipment. Locations in ND, NB, and TX. Write Gleanings, Box HL, P.O. Box 706, Medina, Ohio 44256.

BEE SUPPLIES FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Mich.

RADIAL HONEY EXTRACTORS-5 frames, 6 3/4" or 5 1/2". Patented. Wholesale and retail sales. GAMBLE'S HONEY EXTRACTOR CO., P.O. BOX 7997, Greensboro, N.C. 27407, Ph. 919-299-3973 Day or Night.

FOR TOP QUALITY BEE SUPPLIES and advice on beekeeping problems, visit your nearest Root dealer and send for your FREE Root catalog. Satisfaction guaranteed. The A.I. Root Co., P.O. Box 706, Medina, OH 44256.

BEE EQUIPMENT manufacturers—Oregon pine woodenware, super ends rabbit-joint and beekeeping supplies, smokers, excluders, etc. Write or Call for commercial prices: MONCRIEF BEE SUPPLIES, Post Office Box 625, 1105 Lakewood, Lakeland, FL 33802. (813) 858-6754.

WAXMASTER CAPPING SEPARATOR...melts cappings fast with temperature controlled, circulated hot water, electrically heated. Pack fine quality honey with the PACKING HONEY BOTTLING SYSTEM. All equipment stainless. Free brochure. HONEY SALES COMPANY, Mfrs., 2817 No. 2nd Street, MINNEAPOLIS, MINN. 55411.

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ALL WESTERN BEEKEEPERS: Lock-corner supers — tops — bottoms — frames. Complete stock — supplies & equipment. Phone or write for quantity prices. UNITED BEE CRAFT COMPANY, 600 Harbor Blvd., West Sacramento, CA 95691. (916) 371-9340.

OUR OBSERVATION HIVES, are furniture crafted of beautiful oak and are reasonably priced. Be ready for spring! Write now for free brochure or send \$5.00 for our complete plans and instructions packet. Kawana Honey, 2100 Kawana Springs Rd., Box G, Santa Rosa, CA 95404, Phone (707) 528-4377.

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"CONICAL BEE ESCAPES AND TEMPERATURE CONTROLLED VENTILATORS is our specialty. For free information write to: Trafalgar B. Equipment, 3371 Trafalgar Road, RR 1, Oakville, Ontario, Canada L6J 4Z2."

QUALITY CYPRESS BEEKEEPING SUPPLIES — dovetailed hives and hive parts, beginner's kits, complete supplies. Write: BEE-JAY FARM, Dacula, GA. 30211.

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Allow manufacturing time on large orders. Marvin Smith Apiaries, Rt. 1,

GLEANINGS IN BEE CULTURE

Parma, Idaho 83660, Phone 208-722-5278 days.

BEESWAX, old combs and scrapings collecting? Process it easily and economically with the **BEESWAX PROCESSOR**. Write Shots Inc., 4418 Josephine Lane, Robbinsdale, MN 55422.

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COMMERCIAL SUPERS: Mini of 25 (one size) 9% supers \$3.79 - #2 super \$3.10, 7% supers \$3.25, 6% supers \$2.55 - #2 super \$1.85, 5% supers \$2.40. (call for price of 100 or more supers) Economy Frames — lots of 500 (all sizes: 500 frames \$112.50 or 22½¢ each, 1000 frames \$205.00 or 20½¢ each, 5000 frames \$1000.00 or 20¢ each. Free Discount-Catalog. Glorybee Honey, 1006 Arrowsmith, Eugene, OK 97402, Phone: 503-485-16649.

USED JUNIOR BRAND MELTER (galvanized); Used 20 frame Root Radial Extractor (galvanized tank) with motor; Used 30 gal. stainless steel steam jacketed kettle; power uncapping knife. Marvin Parker, Parma, MO 63870, (314)357-4861.

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"LAGRANT'S", New England's Largest Manufacturer of Bee Supplies, send for our catalog! Northern bred 3 frame nucs with 1981 queens, (limited number). Lagrant's, Ware, Mass. 01082.

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POLLEN TRAP. Bottom Hive Trap. Completely painted and put together. Write or call for information and photos. Champie Pollen Co., 5118 North 18th Ave., Phoenix, AZ 85015. Phone 602-277-0482.

ENOUGH BEE EQUIPMENT for 25 colonies and extractor — 12 frame. Send Post Card for price. Richard Slack, W 1090 Arrowhead Ct., Shawano, WI 54166.

WOODMAN 30 Frame Stainless Extractor with steam and coil and motor. **KELLEY 40 gallon Stainless Bottling Tank** with mixing paddle, heater, motor and stand. 513-322-5370 Evenings.

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FOR SALE

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HAVE A FEW TANKS left - \$20.00 each and one A.I. Root extractor and motor \$300.00. Call Mrs. Pearl Howey, Guthrie Center, Iowa 50250. 515-747-3803. No collect calls please.

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COMPLETE BEE OPERATION for sale. 8 miles from Green Bay. Honeyhouse, 400 hives with supers, 3 extractors uncapper, wax melter, clarifier and liquifier. 414-863-8032.

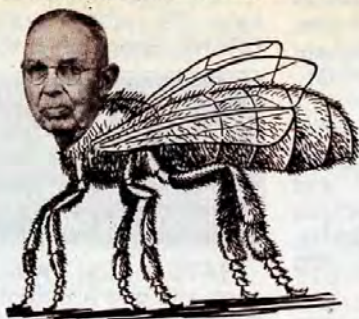
COMPLETE TWO THOUSAND hives operation on pallets, all super standard 10-frame deeps. Two Chev. truck, two fork lifts all stainless steel extracting equipment. Locations in ND, NB, and TX. Write Gleanings, Box HL, P.O. Box 706, Medina, Ohio 44256.

A NUMBER Of collector's items books. Langstroth, Miller, Root, Etc. Write for details D. L. Crowson, P.O. Box 404, Petal, MS 39465.

NOTICE

The pictures and accompanying information for "American Beekeeping Federation Highlights — Seattle, Washington, 1981" (March, 1981 *Gleanings*) were by Evalyn Peterson-Nerbonne of Clear Lake, Wisconsin. Ms. Peterson-Nerbonne is editor of the Wisconsin Badger Bee, a publication of the Wisconsin Honey Producers' Association. Our apology to the author-photographer for the omission of credits.

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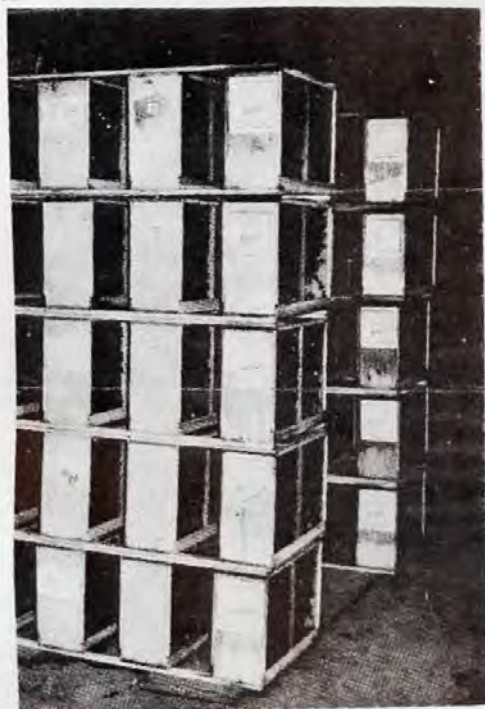
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1 STARLINES
9 MIDNITES
8 ITALIANS
1

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Shipments start first of April depending upon spring weather conditions.

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S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY 1981						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE 1981						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

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